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New Abitibi Reorganization Plan Proposed

Premier Hepburn States Government's Position and Rescinds Court Order For Sale of Abitibi Power & Paper Co.—Royal Commission To Be Appointed To Consider New Plan of Reorganization.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., October 28, 1940—After another week of apprehension concerning their investments, holders of junior securities in Abitibi Power and Paper Company were relieved Thursday by the announcement by Premier Mitchell F. Hepburn that the Ontario cabinet had authorized the appointment of a Royal Commission of three outstanding men to devise, after a thorough study of the position, assets, earnings, record and prospects of the company, "a plan of reorganization which will be equitable to all interests concerned."

The personnel of the Royal Commission will probably have been announced ere this dispatch reaches its readers and in the meantime, the cabinet has rescinded the order-in-council of March 9, 1939, which provided that any reorganization or sale approved or directed by the supreme court of Ontario would be deemed satisfactory to the government.

Premier Hepburn on Government Position

Premier Hepburn's statement was as follows:

"The government has considered the situation resulting from the court proceedings and concerning the abortive sale of the assets of the Abitibi Power and Paper Company. The order-in-council passed on March 9, 1939, contemplated a reorganization or sale under the jurisdiction of the court, which has not materialized. In view of the apparent inability of the company to effect a reorganization or sale, probably due to disturbed conditions in the financial and business world, the government is of the opinion that it is in the best interests of all parties that the order-in-council of March 9, 1939, should be rescinded and accordingly this has been done today.

"In order that the best interests of all parties may be served in determining the future of this very important industry, a Royal Commission of three outstanding men will be appointed for the purpose of considering the whole matter and recommending to the government a plan of reorganization which will be equitable to all interests concerned."

Announcement that a commission will be appointed came one week after the abortive sale proceedings launched by the bondholders' protective committee and one day after F. H. Barlow, master of the supreme court of Ontario, made his report on the sale proceedings. The report made no recommendations and stated that in 14 days the report becomes absolute.

Timber Concession Order Rescinded

The order-in-council referred to extended to April 1, 1940, the timber and water power concessions which had been granted under an agreement dated June 24, 1937. When the war began in September, 1939, Premier Hepburn intimated that this action might be taken as the time was considered inopportune for judicial sale. Now that the government has rescinded the order-in-council it is considered by many as especially significant because under "the Forest Resources Regulation Act of 1936," the Ontario government has the power to make broad regulations regarding the cutting of timber on Crown lands. It may reduce or increase the area of any existing timber concessions, "always having regard to the maintenance of a sufficient supply of timber for the purpose of any existing mill." It also gives the government power to increase the stumpage charges. It has, therefore, power of life and death over the company, and it now seems disposed to exercise these powers in the direction of life.

There have been many proposals for the reorganization of this company, the chief ones being two by the Bondholders' Representative Committee, afterward the Bondholders' Protective Committee, one by the Bondholders' Defensive Committee, and others by R. S. McPherson, liquidator; Wood, Gundy & Company, Limited; Harrison & Company, Limited; the Bradshaw-Ferguson-Scott plan made by a committee formed to bring various groups together; the Preferred Shareholders' Protective Committee plan; the proposals submitted to the court by Noranda Mines; the Kernaghan plan, also submitted to the court; and the A. E. Osler & Company plan, which has been offered since the abortive sale proceedings.

Royal Investigating Body Generally Satisfactory

While there seems to be pretty general satisfaction with the news that the Ontario government is

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Fox River Paper Corp. Opens Mill to Visitors

Several Hundred Persons Take Guided Tour Through Telulah Mill as Part of Program for Public Understanding of Private Enterprise Sponsored by Chamber of Commerce — Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 28, 1940—Openhouse was held Friday of last week by the Fox River Paper Corporation, Appleton, Wis., at its Telulah mill as part of the program conducted by Appleton Chamber of Commerce for public understanding of private enterprise. All departments of the mill were in operation during the evening, partially with overtime help, so several hundred visitors could see the various departments of the mill. The arrangements were made by William Roberts, secretary and treasurer. Guides were provided, and each visitor was given a mimeographed sheet explaining the various operations and key numbers posted at various points.

Fox River Paper Corp. Has 460 Employees

Fox River Paper Corporation is the largest industry in Appleton, with 460 employees and an annual payroll of $600,000. It was pointed out that its annual purchases in the city of Appleton amount to $100,000 per year, and it pays in excess of $40,000 in local taxes. Its annual freight bill is estimated at $120,000. The average current inventory is over $500,000, and the annual sales volume is two and a half to three million dollars. The corporation represents an investment of more than $3,000,000. It is one of the three largest businesses of its type in the world, manufacturing rag content business and technical papers under the family name of Masterline Papers. Among these are bonds, ledgers, onion skin, tracing, drawing, blueprint and duplicating papers. Products are sold all over the world, including Africa, South America and Australia. It is one of the few companies on the Fox River owning its own water power.

Company Was Organized in 1883

The company was organized in 1883, and the present owners purchased it from W. C. Wing on December 1, 1938. E. A. Oberweiser is president, R. F. Bellack, executive vice-president; D. E. Oberweiser, vice-president and William Roberts, secretary and treasurer. Paul Wesco is sales manager, P. V. Park is comptroller and H. C. Krueger is planning director.

The new management has instituted an extensive research and mill control program, as well as making many improvements since 1938. The technical staff has been increased from four to nine. Two chemists under the direction of Rexford Bradt devote their entire time to research. The others, under the direction of Dr. Philip Dixson, a graduate of the Institute of Paper Chemistry, devote all their time to maintenance of quality standards in both raw materials and finished product. The entire staff is headed by Harold Johnston, technical director, and A. G. Wakeman, general production manager.

John Alexander Elected to Masonite Board

Personnel news of the week includes announcement that John Alexander, Jr., Aurora, Ill., has been elected a director of the Masonite Corporation, Wausau, Wis., to fill the vacancy caused by the recent death of W. H. Mason, Laurel, Miss., inventor and founder of Masonite.

Election took place at the annual stockholders' meeting on October 25, in the offices of Aytch P. Woodson, secretary of the corporation, at Wausau. All of the incumbent directors were reelected as follows: Ben Alexander, E. L. Saberson, R. G. Wallace, M. P. McCullough and C. H. Worcester, all of Chicago; C. J. Winton, Jr., Minneapolis; J. H. Thickens, Laurel, Miss., and D. C. Everest, Aytch P. Woodson and C. C. Yawkey, Wausau.

The corporation reported a highly satisfactory year, with equally good prospects for the immediate future.

Because of the absence of most of the directors, their scheduled meeting was adjourned to November 8 in Chicago, where the corporation's executive and sales offices are located.

Frank Broeren to Direct Marathon Sales

Another announcement comes from Leo E. Croy, executive vice-president of the Menasha Products division of the Marathon Paper Mills Company, Menasha, Wis., to the effect that Frank L. Broeren of Neenah, Wis., has been appointed director of sales. He has been identified with the sales department for more than 20 years, and for the last nine years has been in charge of jobbers' sales. A. W. Stompe and Don A. Snyder, both of Neenah, Wis., will assist Mr. Broeren, serving as sales managers of the two major sales divisions of the company.

Paper Mill Employment Off Slightly

A slight drop in employment in paper mills and allied industries for September is shown in reports of the Wisconsin Industrial Commission. The estimated number of wage earners was 22,200, as compared with 22,300 in both July and August. This represented a decrease of 0.4 per cent.

Estimated weekly payrolls reflected a decline of 1 per cent, dropping from $595,000 in August to $589,000 in September. In July, the total was $581,000.

Workers put in an average week of 40.5 hours in September, at an average weekly wage of $26.55. The average hourly rate paid was 65.6 cents.

New Fox River Power Plant Nears Completion

Fox River waters were diverted last week into the new channel built for the new power plant of the Municipal utility at Kaukauna, Wis., which will supply paper mills in that area. One more piece of construction remains, a 270-foot section of the dam.

Brick work on the power house will be finished within a few days, and installation of the water wheel and generator will be started. It is expected

that the plant will be completed sufficiently by the middle of December so operations can be started. The waterpower site of the former Patten Paper Company mill, purchased by the City of Kaukauna for delinquent taxes, is the location of the new plant.

Mills Succeeding in Cleaning Up Pollution

Dr. C. A. Harper, director of the Wisconsin State Board of Health, has expressed himself as optimistic about current efforts of the paper manufacturers to clean up the pollution conditions in the Fox River. The two big aspects of the problem, he says, concern the development of an economically feasible method to extract sulphite from paper mill wastes, and to neutralize the sugars which cause the pollution and stench, particularly in the area at Green Bay, Wis.

The mills have a committee at work in cooperation with the Institute of Paper Chemistry to work out some solution of the problem. They are financing the research, and Dr. Harper is satisfied the mills are doing all they can to solve the problem. Any action to compel the elimination of pollution has been withheld pending a solution.

Tomahawk Kraft Co. To Log 19,000 Acres

The Tomahawk Kraft Paper Company, Tomahawk, Wis., is planning to log a tract of 19,000 acres on the Flambeau River near Hawkins, Wis. A camp has been erected and the crews have been hired.

Negotiations previously were in progress for purchase of the land by the State of Wisconsin, since it is the only sizable stand of mature timber left in the state. A trade of these lands for acreage in Vilas and Oneida Counties, where the company is blocking up a private forest for its future supply, appears to have fallen through, so the company is going ahead with its plans. The exchange was to be made with the State of Wisconsin for some of its cutover lands.

R. H. Laftman Speaks on South's Resources

JACKSONVILLE, Fla., October 26, 1940—Its wealth of natural resources make the South economic opportunity, not problem, No. 1, R. H. Laftman told his fellow Rotarians at their weekly luncheon in a talk outlining the growth of the Southern paper and pulp industry.

Today, there are 22 pulp mills throughout the South, six of them in Florida, which together with their timber holdings represent a huge investment, said Mr. Laftman, manager of the plant of the National Container Corporation here.

The speaker discussed the problem of conserving the timber supply, declaring "You can so manage the forests that the supply will last forever; all that's needed is education."

Despite the huge consumption of wood in Georgia, Alabama and Florida and the tremendous annual loss from fire, growth still exceeds total drain in the area, he reported.

In Florida, however, consumption is running slightly ahead of new growth, Mr. Laftman added, but the trend could be reversed by reducing the loss by fire.

Mr. Laftman's was one in a series of vocational talks by members of the Rotary club, which met in the Mayflower hotel with Horace A. Long, president, presiding.

Trustee Runs Sauquoit Paper Co.

UTICA, N. Y., October 28, 1940—The Sauquoit Paper Company, Inc., 200 Seward, is being operated under a trustee, following a petition by the company for a reorganization in Federal Court here. Judge Frederick H. Bryant appointed Ralph W. Luethi, Norwich Corners, trustee, to continue the business pending the reorganization proceedings. Appointment was made in Syracuse on motion of Edward M. Brown, Utica, attorney for the company.

The petition states the company has operated at a loss for several months because of keen competition, high cost of materials and low sale prices. It converts tissue paper into toilet paper, napkins and towels. Some of the creditors have begun suit to collect on their claims. The company stated if it ceased operations, even for three or four days, the damage to its business would be great.

A committee of New York creditors consisting of Howard Whittemore, E. Meyer and T. F. Murphy, has been meeting with a disinterested committee of Uticans and new capital has shown interest in the business, it is stated.

The Utica committee consisted of Charles W. Brothman, treasurer, Skenandoa Rayon Corporation, and John D. Strain, manager of the Industrial Association of Utica.

Mr. Luethi, as trustee, was directed to continue the business under bond for $25,000 and to report to the court on the condition of the company.

Interested persons may suggest plans of reorganization to the trustee by December 1, and the debtor is directed to file its plan with the court by January 1 or then give reasons why no plan can be filed.

At a meeting of directors, October 11, Austin Ross, president; Thomas W. Ross, vice-president and chairman of the board, and Clarence P. Spofford, vice-president, were present. Thorne Pendleton and Randell A. Ross were absent, according to the certification by Ralph Schorge, secretary. The directors voted to ask for a reorganization under Chapter 10 of the Bankruptcy Act.

The financial statement as of September 10 places liabilities at $345,547 and the assets at $414,179. This included real estate, plant and equipment as appraised December 31, 1939, but the statement said the appraisal was far in excess of present values. Against the property are mortgage bonds for $165,000.

Liabilities include: Unemployment tax, $700; real estate tax, $4,947; accounts, $36,450; trade acceptances, $138,450, and the mortgage bonds.

Assets include: Cash, $1,500; accounts, $6,679; merchandise, $54,000; plant, $347,000, and miscellaneous items, $5,000.

Capital stock consists of 1,370 preferred shares on which 6 per cent dividends have accumulated for "some time" and 6,000 shares of common.

Named For Chemical Course

Lieut. Maurice A. Peerenboom, who has been associated with the Nekoosa-Edwards Paper Company, Port Edwards, Wis., has been named by the war department to take a six weeks' course in chemical warfare at the Edgewood Arsenal, Edgewood, Md. He is serving with Battery E, 120th Field Artillery, 32nd Division.

Paper Milk Containers Now Used in Chicago

Gardner-Richardson Co. Providing Paper Milk Cartons for Distributing Products of Two Chicago Dairies — Milk Companies Advertise Merits of Paper Package — Midwest Market Active.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., October 28, 1940—Chicago's paper market continued to struggle onward to the expected "prosperity corner" during the past week. Reports continue to be at variance as to the condition of business although it seems obvious that buying is slightly better and that strength is still the predominate note in the price structure. Books, particularly the coated varieties, were said to be only slightly improved during the past ten days and covers were likewise reported as somewhat more active. Kraft papers made a pronouncedly better showing while announcements and envelopes also indicated a widening of the buying trend. Groundwoods were spotty with some reports quite encouraging. Newsprints were reported as "fair". Board markets showed evidence of the general increase in use of paper in varied new fields and annual reports of companies engaged in the container and allied fields were encouraging. Waste papers were firm in most grades.

Initiate Paper Milk Containers

The Gardner-Richardson Company with factories in Middletown, Ohio and Chicago sales headquarters at 919 North Michigan Avenue, had the honor of giving Chicago it's first "full dose" of paper milk containers this week. The Gardner-Richardson organization provides the containers for the Dean Milk Company and Fieldcrest Dairies which won suits against the city of Chicago in relation to the legality of paper milk cartons here. This week, following pronouncements of the Federal judge, the Fieldcrest Dairies instigated a vigorous advertising campaign for the sale of their product in the new Gardner-Richardson cartons. The advertisements stressed convenience, sanitation and economy and likewise depicted the cartons used for cream, milk and other dairy products.

Some indication of the growing importance of this product to the paper industry is likewise evidenced by the addition of paper bottles to the package line of the Sutherland Paper Company. The Sutherland paper bottle is a waxed, cone-shaped container permitting splendid printing reproduction. Manufactured in quart, pint and half-pint sizes it can be used equally well for all kinds of liquids.

Paper Fund Drive Underway

Determined to be "over the top" by Thanksgiving but with plenty of work ahead, Chicago paper executives identified with Chicago's annual Community Fund Drive began on their second week of intensive effort under the general chairmanship of Wesley M. Dixon, vice president of the Container Corporation of America. As of October 23, the Chicago paper contingent had raised only 20 per cent of its $30,000 quota compared to the 46 per cent of the quota already raised in the general drive. The total contributions on the above date were around $7,000 with expectations for a $10,000 total by the end of the week. The drive for $3,604,000 to provide aid for worthy charity organizations in the area is moving ahead of last year and, inasmuch as activity got under way three weeks ahead of 1939, drive chiefs expect the goal to be reached by the Thanksgiving date. Such well known Chicago paper executives as Frank Haggerty, Hamilton Vose, J. B. Ughetti, K. E. Hellstrom, R. C. Johnson, W. J. Tilden, J. D. Swigart and G. C. Olson are active in the drive.

Dwight Bros. Adds New Line

Lancaster Bond, manufactured by the Gilbert Paper Company, has recently been added to the Dwight Bros. Paper Company line. Ten Point Post Card, made by Wheelwright Papers, Inc., is also a newcomer to the representative line of the Zellerbach-Midland Paper Company.

Allied Group Holds Meeting in Chicago

The Paper Stationery and Tablet Manufacturers Association held its Fall meeting in Chicago during the past week. With meetings held at the Edgewater Beach Hotel under the supervision of E. P. Eaton, secretary, the manufacturers spent two days in reviewing conditions and in discussing legislative statutes and their effect on the industry. The evening meeting on October 24 was addressed by J. T. Meek, executive secretary of the Illinois Federation of Retail Associations and Chicago correspondent of this publication.

Logging Congress Elects Officers

Truman W. Collins, Portland, Ore., was elected president of the Pacific Logging Congress at the annual meeting of the Board of Directors held during the recent 31st annual Congress at the Empress Hotel, Victoria, B. C. A. A. Lausmann and A. Whisnant, both of Portland, Ore., were elected as vice-president and secretary respectively.

The Congress accepted the report of the Nomination Committee with the result that the following directors were appointed: British Columbia—Roger J. Cobb, George W. O'Brien and C. D. Anderson, Vancouver, and Ross Pendleton and S. G. Smith, Port Alberni.

Eastern Canada: J. D. Gilmore, Montreal.

California: R. A. Colgan, E. E. Baker, J. J. Krohn, and Theodore S. Walker.

Montana: Donald Mackenzie and Leland Harper.

Wyoming and South Dakota: W. D. Beardshear.

Idaho: T. E. Kinney and E. C. Rethy.

Oregon: T. B. Jackson, Victor L. Torrey, Lloyd R. Crosby, N. W. Boles, Truman W. Collins, Carl C. Coleman and A. A. Lausmann.

Washington: Roy F. Morse, S. A. Stamm, Everett G. Griggs, Arnold Polson, Clyde Corman, E. R. Aston and E. T. Clark.

Gair Old Timers Association Meets

That unique organization, Gair Old Timers Association, of some 400 members, organized in 1933 to honor the memory of Robert Gair and to renew old friendships between present and former employees of ten years' standing in Mr. Gair's organization, held its Eighth Annual Dinner on October 19, 1940 in the Grand Ballroom of the Hotel New Yorker, New York City. This association, which is without dues, individual responsibilities, or benefits, has always endeavored to keep alive the memory and achievements of Robert Gair. In 1937 it erected, at the corner of York and Washington Streets, Brooklyn, N. Y., a bronze memorial plaque in his memory as a distinguished soldier, inventor, employer and industrialist. Last year, 1939, the centenary of his birth was suitably celebrated at the annual dinner and a copy of a biography of Robert Gair by H. Allen Smith, with an introduction by Lewis Mumford, published by The Dial Press in January, 1939, was presented to each guest.

The New Officers

At the dinner this year the following officers were elected: Honorary President, Lawrence Beattie, Gair Realty Corporation, Brooklyn, N. Y., whose employment began about 1886; president, Paul Lang, plant manager, Continental Folding Box Company, Ridgefield, N. J.; vice-president, Walter E. Ringlo, Sales Department, Robert Gair Company, Inc.; and H. B. Van Antwerp, of Sinclair & Valentine Company, New York City, was re-elected secretary and treasurer.

Charles F. Stocker, of Sweeney Lithograph Company, and Frank McCormick, Gair Cartons Division, Piermont, N. Y., had charge of the arrangements and the entertainment.

Five Representative Members Lost

During the past year the Association lost five of its representative members: William Worrall, retired, compositor and proofreader, with the company from 1884 to 1930; George R. Logan, retired, thirty years with the company and for many years its assistant comptroller; Frank Auer, retired, label cutter, forty years with the company; Harold Hughes, former purchasing agent of the Company, thirty years service prior to 1922, subsequently in the paper export field with Pulp and Paper Trading Company and later in association with Parsons & Whittemore; George West Gair, honorary chairman of the association and chairman of the Board of Robert Gair Company, Inc. Their careers were reviewed by Mr. Patrick F. Gaffney, Densen-Banner Company.

Officers for Preceding Years

The officers for the preceding year were: Honorary President, E. B. Kelley, president of E. B. Kelley Company, Inc., whose employment began about 1889; president, Harry J. McPhilliamy, manager of the Pennsylvania Corrugated Box Division of Robert Gair Company, Inc., at Philadelphia; vice-president. Louis Barbieri, of Sterling Engraving Company, and H. B. Van Antwerp, of Sinclair & Valentine Company, who was re-elected secretary and treasurer.

Those in Attendance

Among those present at the banquet were: Hugh E. Axmacher, E. J. Bakewell, L. D. Barbieri, C. S. Barnes, A. J. Bauser, J. G. Bender, F. Blocker, C. Bogart, H. Boarman, C. Burke, H. N. Burnham, Jr., A. W. Campbell, R. L. Campbell, H. M. Carpenter, J. H. Cashman, W. F. Cavanagh, G. Chagnon, Jr., F. Collins, F. C. Costello, H. V. Costigan, F. Coursen, E. H. Curtiss, T. J. Dalton, J. Delaney, R. B. Devon, A. Doll, F. F. Doll, G. H. Drake, J. W. Duerr, T. Eisner, P. E. Erickson, S. Evans, Jr., O. Fiore, W. W. Fitzhugh, J. Flynn, E. Forsbrey, P. F. Gaffney, L. Gilmartin, W. Glennon, J. J. Gormley, S. A. Graves, G. Griesel, C. T. Gritman, G. B. Greenwood, J. Gruneisel, J. Grull, H. Hagedorn, O. Hendrickson, F. Hogan, W. F. Howell, A. Huether, T. E. Kamish, E. Kain, R. E. Kauffman, J. Keating, E. B. Kelley, J. Kienzle, P. Lang, I. Larsen, W. Leischker, M. G. Love, H. Luz, O. Mann, J. Martin, F. J. Meyer, W. Meyer, C. Mills, L. B. Moss, J. Muir, G. W. Murray, F. McCormick, J. McCrea, J. F. McKenney, H. J. McPhilliamy, D. O'Connor, F. Ohliger, J. Pabst, W. H. Patterson, G. Pauchner, J. Paxson, H. W. Pupke, W. H. Rathgen, F. Richter, W. E. Ringle, T. Roman, R. A. Ross, A. Rossum, L. Roth, G. Rudek, A. Sandhoff, W. Sandhoff, F. Schmidt, J. Schultz, E. E. Seaver, A. Smith, F. Smith, J. W. Smith, S. Smith, E. O. Sommer, H. A. Soule, R. Stutterheim, F. Stocker, C. Stocker, E. Sweeney, A. Tockar, H. B. Van Antwerp, H. Van Decker, F. Vetter, J. Vogel, H. von Hasslacher, G. Wahlig, D. Walters, and F. G. Wasgatt.

Box Concerns Sign Desist Orders

Federated Container Company, Inc., New York, a corporation engaged in the sale and distribution of corrugated fiber shipping boxes, has agreed with the Federal Trade Commission that it will cease and desist from stamping or marking its boxes or causing them to be stamped with the purported certification of a box maker or manufacturer, together with such use of its corporate or trade name "Federated Container Company, Inc.," as may tend to create the impression that it is the maker of the boxes. The corporation also agrees to discontinue use of the word "Maker" or words similar meaning to imply that the corporation actually owns and operates or directly and absolutely controls the plant or factory in which the products are made or manufactured.

Also the Merit Container Company, New York, engaged in the sale of fiber board packing boxes, has agreed with the Commission to cease and desist from stamping or marking its products or causing them to be stamped or marked with the purported certification of a box maker or manufacturer, together with such use of their trade name "Merit Container Company" as may tend to create the impression that they manufacture the boxes. They also agree to cease and desist from use of the word "Maker" or other words of similar meaning which may tend to convey the belief to purchasers that they actually own and operate or directly and absolutely control the plant or factory in which the products are made or manufactured.

Obituary

Charles H. Sisson

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., October 28, 1940—Charles H. Sisson, 74 years old, vice president of the Racquette River Paper Company, died this week at his home here following a brief illness. He recieved his education in the schools here and for many years was in charge of operations for the Sherman Lumber Company, of Tupper Lake. For several years he supervised outside operations for the Racquette River Paper Company when the Sisson family took over the properties of what is now the Racquette River Paper Company. He was the first Mayor of Tupper Lake when that village was incorporated in 1902 and also served as mayor of Potsdam in 1925. He also served as a director of the Peoples' Bank, of Potsdam and was a past president of the Rotary Club. The principal survivors are his wife, a son, four daughters and three brothers.

Irwin F. Megargee

Irwin F. Megargee who, for a great many years, was connected with the Curtis Paper Company died last week.

The funeral services were held at St. James Church, 38th and Chestnut Street, Philadelphia, at 10 A. M. Monday, October 28 and the mill of the Curtis Paper Company at Newark, Del., was closed on that date.

Grant M. Fowler

Grant McAlister Fowler, plant superintendent, of Powell River Company, died in the Vancouver General Hospital at Vancouver B. C. recently. He was one of the youngest and best known pulp and paper executives in Canada, and was appointed general superintendent of the big pulp and newsprint plant at Powell River B. C. 18 months ago.

Born in Sherbrook, Nova Scotia on July 23 1897 he was educated at elementary and high schools in that province and attended McGill University, graduating as a master of science he entered the paper industry. He served overseas with the McGill Battery.

Following the war he was with the Dryden Paper Company and the Canadian Forest Products Laboratories and then went to Grandmere, P. Q., as general superintendent of the Laurentide division of the Consolidated Paper Company. In April 1939 he was appointed general superintendent at Powell River.

Frank G. Feeley

Frank Goodrich Feeley, 64, chief engineer of E. D. Jones & Sons Company, paper machinery manufacturers, and founders, Pittsfield, Mass., died October 20 at his residence, 739 North street, after five years of illness which followed a shock.

A native of Pittsfield, Mr. Freeley was educated in the public schools and at Massachusetts Institute of Technology, where he was graduated in 1897. After a career in mechanical engineering, in various parts of the country, he returned to Pittsfield in 1927 to become associated with E. D. Jones & Sons Company, as assistant to the late E. A. Jones, who was president and general manager. Later, Mr. Feeley was made chief engineer and manager of the plant, in which he served at the time of the shock which disabled him. Thereafter, he remained chief engineer, but has been unable to participate actively in plant affairs.

Mr. Feeley was active in Pittsfield community welfare work. He was a trustee of the City Savings Bank and a member of the First Church of Christ, Congregational.

His wife survives, as do a daughter, Mrs. John N. Dyer of Stamford, Conn.; a son, Frank Goodrich Feeley Jr. of Oswego, N. Y.; a granddaughter Ann Dyer, and a sister, Mrs. Carolyn Feeley Reid of Scarsdale, N. Y.

The funeral was held at the Wellington Funeral home, and burial was in Pittsfield Cemetery.

Gus Riedel

KALAMAZOO, Mich., October 24, 1940—Gus Riedel 73, founder of Gus Riedel & Son and installer of most of the brushes used on paper coating machines in the United States, died in the Borgess Hospital following a week's illness.

Born in Posen, Germany February 10, 1867, Mr. Riedel served an apprenticeship and mastered his art. In 1890 he came to this country locating in Holyoke where he began the manufacture of brushes for the New England paper mills. In 1906 he moved his plant to Paw Paw, Michigan and later in 1910 transferred the institution to Kalamazoo to be nearer the fast growing paper industry. The plant has been enlarged from time to time and by his own estimate produced about 93 per cent of coating brushes in current use.

Made by hand out of rare imported Siberian and Manchurian hog bristles, he and his son A. W. Riedel have carried on the non-mass production of coating mill brushes. Their technics still include the minute inspection of each bristle before processing.

Surviving him are the widow Marie Laube Riedel to whom he was married in 1891, also a native of Posen, the son A. W. Riedel who will continue the business, a daughter Mrs. F. W. Moessen, a grandson and grand daughter, two brothers and two sisters. Burial in Kalamazoo.

Durham Container Co. Starts

DURHAM, N. C., October 29, 1940—Approximately 15 persons are employed by the Durham Container Company which opened in the old East Durham Cotton Manufacturing Company property last week.

The new Durham company is in charge of James F. Burnham, business manager of the local branch of the concern. The company will make corrugated boxes for all sorts of industries.

According to Manager Burnham the company has spent about $10,000 in putting the building in order for the plant to operate efficiently. Much heavy machinery has been installed, which called for reinforced floors.

The local plant is a subsidiary of the Menasha Wooden Ware Corporation of Menasha, Wis., and is the only industry of its type in the South. The building here covers about 30,000 square feet of floor space and an option held by the company permits future expansion of the property.

Burnham said yesterday that his company is highly optimistic over the future of the industry here.

NEW ABITIBI REORGANIZATION PLAN PROPOSED

(Continued from page 7)

about to appoint a Royal Commission to consider the Abitibi affairs, there is still some opinion to the effect that the government should accept full responsibility themselves, as they did in the earlier order-in-council, dated June 24, 1937, which, in effect, said that the government agreed that if a reorganization or sale of the company's assets should take place "on a basis satisfactory to the government," the government would transfer all rights over which it had control to the new company. This order was cancelled by the order of 1939, which, in turn, was rescinded Thursday, but the cancellation of the latest order does not, of course, re-instate the earlier order.

The only apprehension still remaining was expressed by Col. George A. Drew, leader of the Conservative opposition in the legislature, who says:

"In recent years Royal Commissions have been appointed for no other purpose than to avoid responsibility. A Royal Commission only makes recommendations, which the government can shelve indefinitely, as has happened in most cases recently, either with Dominion or provincial commissions."

Financial Details Under Discussion

Another point bothering some interests, is whether or not excess profits tax would apply before income bond interest or afterward. The point was raised after the latest proposals by E. A. Osler & Company, because an essential element in that plan is to exchange the present 5 per cent fixed interest bonds for five per cent income bonds.

Interest on income bonds in many cases is treated just as if it were dividend payments on preferred stock and the tax would be taken before the interest in such cases. However, a quotation from the Income War Tax Act seems to show the objective of the department to be to permit priority to interest on income war bonds or debentures when the latter were issued since 1930 to refund fixed interest-bearing bonds, especially when that was done to help a company which had been in financial difficulties. Abitibi would qualify in this respect.

Admitting that Col. Drew's point is well taken, most of those interested seem to be satisfied that the Royal Commission is the best way out because the commission will have before it all the various plans and all data brought up-to-date, and, removed from any extraneous influences, such as politics, the commission is likely to work out some scheme which, while it may not entirely satisfy everyone, will be equitable and in the best interests of the greatest number.

Background of the Abitibi Company

The Abitibi Power and Paper Company, Ltd., was incorporated on February 9, 1914, to take over the assets and undertakings of the Abitibi Pulp and Paper Company, Ltd., which had been incorporated in December, 1912. The company's charter is perpetual, like the majority of the charters held by its subsidiary companies. Following failure to meet first mortgage bond interest payment due June 1, 1932, the company went into receivership Sept. 10, of that year. Under the terms of the indenture and mortgage securing the bonds, the company had 60 days within which to make payment and avoid default. This was not done and the Montreal Trust Co., trustee for the bondholders, made application for the appointment of a receiver and manager of the assets. G. T. Clarkson was appointed to this office by the supreme court of Ontario and is still acting in that capacity. The directors prior to receivership (they do not function as such during receivership) were: Alexander Smith, of Chicago; Sir Thomas Tait, Hon. A. J. Brown and W. A. Black, Montreal; George H. Mead, Dayton, Ohio; T. H. Watson, L. R. Wilson, W. H. Smith and S. F. Duncan, Toronto; and W. H. Carter, Winnipeg. Sir Thomas Tait, Mr. Brown and Mr. Watson have subsequently died.

Premier Names Royal Commission

Premier Mitchell F. Hepburn has named the Royal Commission appointed by the Ontario government to investigate the affairs of Abitibi Power and Paper Company and recommend a plan of reorganization which will be equitable to all interests concerned.

The members of the commission are: Hon. Charles McTague, justice of the appeal division of the supreme court of Ontario; Sir James Dunn, president and chairman of the board of the Algoma Steel Corporation, Ltd., and A. E. Dyment, chairman of the board of the Canadian General Electric Company.

"Every effort will be made to expedite the commission's work," said Premier Hepburn. "That's a strong commission and one which I believe will command the respect of the people of Ontario."

Terms of the reference for the investigation are being drafted by law officers of the attorney-general's department, and will be submitted to the commission for consideration. Afterwards the order will be made setting up the commission, the premier said.

Sonoco Products to Expand

The Aeolian Plant on North avenue, Garwood, N. J., has been purchased by the Sonoco Products Company, Inc., in an expansion move.

Sonoco Products Company, Inc., is engaged in the manufacture of cardboard tubing, cartons and other paper products. It now occupies a building, acquired a few years ago, which at one time also was a part of the Aeolian holdings. Sonoco also operates factories in Connecticut and at Hartsville, S. C., where it maintains its principal offices.

The property purchased embraces a four-story brick factory comprising 115,000 square feet of floor space and a large tract of land providing room for expansion.

Gaylord Container Leases Offices

Anson C. Goodyear, chairman of the board of the Gaylord Container Corporation, has leased office space at 654 Madison Avenue, New York, through Brown, Wheelock, Harris, Stevens, Inc.

Maine–New Hampshire TAPPI Meets At Orono

The first meeting of the proposed Maine-New Hampshire Section of the Technical Association of the Pulp and Paper Industry was held at the University of Maine, Orono, Me., on October 25-26, 1940. Worthen E. Brawn of the Pejepscot Paper Company and Chairman of the Organization Committee presided. About 140 attended, an unusually large attendance for the initial meeting of a proposed Section.

Mr. Brawn in his opening remarks pointed out the need of a pulp and paper forum for operating and technical men in Northern New England. It is planned to meet twice annually and to have programs of discussions that will be of vital value to mill men.

Program General in Character

The program of the first meeting was necessarily general in character. Professor Paul D. Bray and J. G. L. Caulfield of the chemical engineering staff outlined the courses given to pulp and paper students and the type of research activities followed. These talks were followed by an inspection of the laboratories and pilot plants of the University.

At the banquet, held in the evening Mr. Brawn introduced President Arthur A. Hauck of the University, who talked on the relationship of the University of the pulp and paper industry and pointed out that there were more graduates in the paper industry than in any other.

R. G. Macdonald Speaks

Mr. Brawn then introduced R. G. Macdonald, secretary-treasurer of TAPPI, who commented on the histories of the existing local sections of the Association, pointing out that through enthusiastic local initiative, thriving sections exist in New England, New York, the Delaware Valley, the Kalamazoo Valley, Ohio, the Lake States and on the Pacific Coast.

Dean Cloke Presides

Dean Paul Cloke of the College of Technology presided as toastmaster and introduced the two speakers Richard Cross, executive secretary of the New England Council and A. E. Norton of Portland, a consulting chemist. Mr. Cross described the part that New England industry is playing in the national economy. With 7% of the population New England produces 10% of the manufactured products. About 80% of the industrial companies employ 100 or less. Mr. Norton gave a very interesting lecture on Plastics, illustrating his talk with specimens of various molded products. In commenting on raw materials for plastics, Mr. Norton pointed out that speed of fabrication is of greater economic importance than the cost of the raw materials used. He felt that the pulp and paper industry will play an important part in the future development of the plastics industry.

On Saturday morning the principal speaker was H. G. Noyes of the Oxford Paper Company, who talked on Vocational Training. Mr. Noyes pointed out the need for management to recognize the need for a training program in the mill and necessity of having competent teachers. He indicated the excellent help that can be obtained from the Federal and State Governments, universities, the Technical Association and other agencies in organizing and conducting training programs.

Following this talk George D. Bearce of the Maine Seaboard Paper Company presented the sound film showing the operation from Woods to Pressroom in the manufacture of newsprint paper.

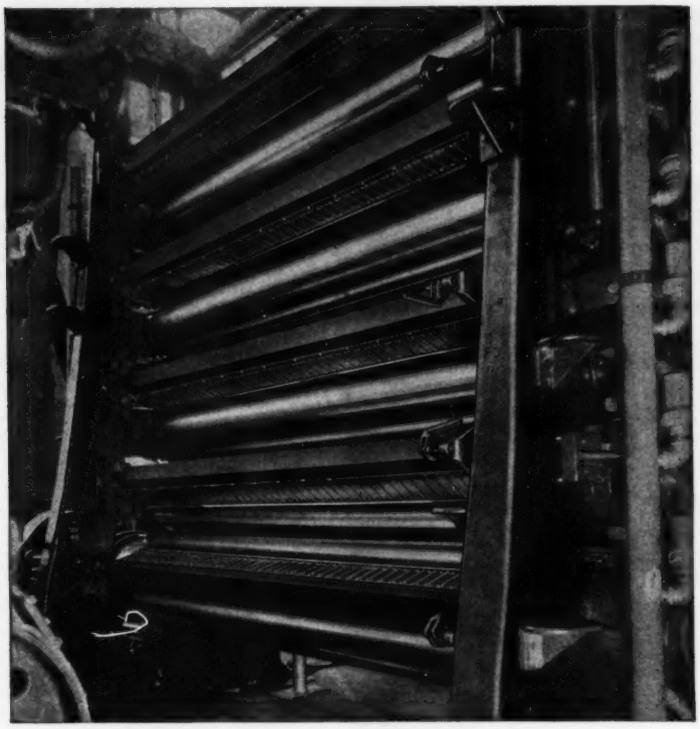
Officers Elected

In the business session Mr. Bearce read the Articles of Organization of the proposed Section. These were adopted. In the election, the following were elected for the coming year: Chairman, W. E. Brawn, Pejepscot Paper Company, Brunswick, Maine; Vice Chairman, T. M. Barry, Fraser Companies, Ltd., Madawaska, Maine; Secretary-Treasurer, J. G. L. Caulfield, University of Maine; Executive Committee, B. T. Larrabee, Brown Company, Berlin, N. H.; E. P. Ingalls, S. D. Warren Company, Cumberland Mills, Maine; T. F. Spear, Oxford Paper Company, Rumford, Maine and Clifford Patch, Eastern Corporation, Bangor, Maine.

Special entertainment was provided at the banquet by the University of Maine Glee Club. The ladies were entertained at tea by Mrs. Hauck and the wives of the staff of the Chemical Engineering faculty and were taken on an inspection trip to the Oldtown Canoe Company.

Those in Attendance

Among those present were the following: Robert G. Adams, Oscar Anderson, A. B. Andrews, G. H. Argue, F. W. Armes, C. T. Backus, F. Thaxter Barrows, T. M. Barry, E. M. Battery, G. D. Bearce, E. J. Bogan, P. S. Bolton, Wilber Bradt, Charles A. Brautlecht, Bertrand F. Brann, W. E. Brawn, Paul Bray, J. G. Bullard, Benjamin B. Burbank, Lawrence Burns, H. F. Butcher, J. G. L. Caulfield, Paul Cloke, E. R. Comee, Robert E. Crockett, Richard Cross, A. P. Davis, P. A. Donaghy, John H. Doughty, Jr., Irwin B. Douglas, Harold E. Duston, Edward Engel, Edson J. Fernald, Wm. N. Field, James J. Forsythe, K. R. Fox, E. R. Granger, A. P. Gregory, Arthur A. Hauck, H. Hayes, Arthur H. Holbrook, Chas. I. Horton, L. C. Jennes, G. Johanson, A. L. Johnson, Edward W. Keith, W. A. Ketchen, Joseph W. King, F. J. Lamers, R. M. Leighton, Herbert S. Leonard, R. G. Macdonald, F. T. Martin, O. A. Mason, L. McFail, Harold S. Morse, Rexford Murch, C. M. Myers, B. F. Neitze, Harry Newell, W. J. Nolan, Arthur Norton, H. G. Noyes, J. J. O'Brien, F. W. O'Rourke, Clifford Patch, C. F. Penning, J. W. Phelps, Harold E. Pratt, Glenn E. Price, A. E. Regnier, Floyd G. Scammon, Joseph Shorlter, T. F. Spear, Fred S. Sprague, W. D. Stroud, Roy Tewksbury, L. Tilley, John T. Topolosky, John Turbyne, J. Edward Vivian, Carl A. von Ende, Harvey Wallace, F. O. White, Roy P. Whitney, Ashley B. Wood, Jr., and Jack F. Wright.



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VICKERY DOCTORS

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending October 30, 1940

	High	Low	Last
A. P. W.	2⅛	2	2
Armstrong Cork Co.	31¾	30¼	31½
Celotex Corp.	7⅜	7	7
Celotex Corp., pf.	61	61	61
Certain-Teed Products Corp.	5	4¾	4¾
Certain-Teed Products Corp., pf.	30½	29¼	29¾
Champion Paper & Fibre Co.	22⅜	22¼	22¼
Champion Paper & Fibre Co., pf.	102	101	101½
Congoleum-Nairn Co.	20	19	19⅞
Container Corp. of America	17⅞	17⅛	17¾
Continental-Diamond Fibre Co.	7¼	7	7⅛
Crown-Zellerbach Co.	15⅜	15	15⅛
Crown-Zellerbach Co., pf.	88	87¾	87¾
Flintkote Co.	17⅜	16⅝	17⅜
Robert Gair	2¾	2¾	2¾
Robert Gair, pf.	16¾	15	15⅞
International Paper & Power	15¼	14½	15
International Paper & Power, pf.	62	60½	61¾
Johns-Manville Corp.	68½	67¼	67½
Johns-Manville Corp., pf.	127½	126½	127½
Kimberly Clark Corp.	37	35	37
MacAndrews & Forbes	29¼	29¼	29¼
MacAndrews & Forbes, pf.	130½	130½	130½
Masonite Corp.	30⅛	29¼	29⅜
Mead Corp.	8¾	8½	8¾
Mead Corp., pf.	75	75	75
Paraffine Companies, Inc.	37⅞	37	37⅜
Paraffine Companies, Inc., pf.	100	100	100
Rayonier, Inc.	16⅞	16¼	16¼
Rayonier, Inc., pf.	27	26	27
Ruberoid Co.	17¼	16½	17¼
Scott Paper Co.	41⅞	41	41⅞
Scott Paper Co., pf.	113½	113	113
Sutherland Paper Co.	22¾	22¾	22¾
Union Bag & Paper Corp.	12⅜	11⅝	12¼
United Paperboard Co.	3⅝	3¼	3¼
U. S. Gypsum Co.	77	74	74
U. S. Gypsum Co., pf.	177½	177	177

New York Curb Exchange

High, Low and Last for Week Ending October 30, 1940

	High	Low	Last
American Box Board Co.	....	....	....
Brown Co., pf.	19¼	19¼	19¼
Great Northern Paper	41½	40½	41½
Hummel-Ross Fibre Co.	6¾	6⅜	6⅝
National Container Corp.	11⅝	11⅜	11⅜
St. Regis Paper Co.	2⅞	2⅝	2¾
St. Regis Paper Co., pf.	72	71	71
Taggart Corp.	3½	3	3½

Fraser Companies Net $746,055

Fraser Companies, Ltd., and subsidiaries for the nine months to September 30 reports on unaudited net profit of $746,055 before Federal and Canadian income and excess profits taxes, compared with $443,728 loss for 1939 period. On same basis profit for September quarter was $272, 810 compared with $376,349 profit in June quarter this year and $3,811 profit in September quarter a year ago.

Gaylord Earnings Higher

The Gaylord Container Corporation for the nine months ended September 30 reports a net profit of $1,010,093, equal, after preferred dividend requirements, to $1.47 each on the 539,221 shares on common stock, compared with $317,904, or 21 cents a share, in the similar period of 1939.

Sutherland Earns $2.28

The Sutherland Paper Company for the nine months to September 30 reports a net profit of $655,784, equal to $2.28 a share on 287,000 shares of common stock, against $530,093, or $1.84 a share, last year. Twelve months to Sept. 30: Net profit, $848,881, or $2.96 a share, against $608,748, or $2.12 a share, for twelve months to September 30, 1939.

Gair Co. Nets $530,625

The Robert Gair Company, Inc. and United States subsidiaries report for the nine months ended September 30, 1940, profit after depreciation, interest and dividends of subsidiary company, and provision for federal income tax but before interest on income notes of $530,625.19.

To conform with the rates prescribed by the second Revenue Act of 1940, the profit for the nine months ended September 30, 1940, has been adjusted by increasing the provision for federal income taxes from 20.9 per cent to 24 per cent.

Gair Company Canada Limited, wholly owned subsidiary of Robert Gair Company, Inc., reports for the nine months ended September 30, 1940, profit, after $302,000.00 provision for Dominion and Provincial income taxes and Dominion excess profit tax, of $163,970.51 in Canadian dollars.

Due to the discount on exchange of Canadian dollars into United States currency, issue of a consolidated statement of earnings is impracticable and no comparsion with the corresponding period of the previous year is available.

Ruberoid Profits Up

The Ruberoid Company for the September quarter reports a consolidated net profit of $342,583, equal to 86 cents each on 397,806 shares outstanding, against $239,871 or 74 cents a share on third quarter a year ago; net sales, $5,288,523 compared with $4,778,221, an increase of 10.7 per cent. Nine months: Net profit, $526,425 or $1.32 a share, against $501,878 or $1.26 a share last year; net sales, $12,956,900 increased 7.8 per cent over the $12,017,864 sales for the nine months period of 1939.

Puget Sound Nets $2.36

The Puget Sound Pulp and Timber Company reports for the nine months to September 30 reports a net profit of $822,763, equal, after preferred dividend requirements, to $2.36 a share on 326,156 common shares. Net profit for last year's period was $2,332, or 2 cents each on 123,637 shares of $20 par, 6 per cent cumulative convertible preferred stock.

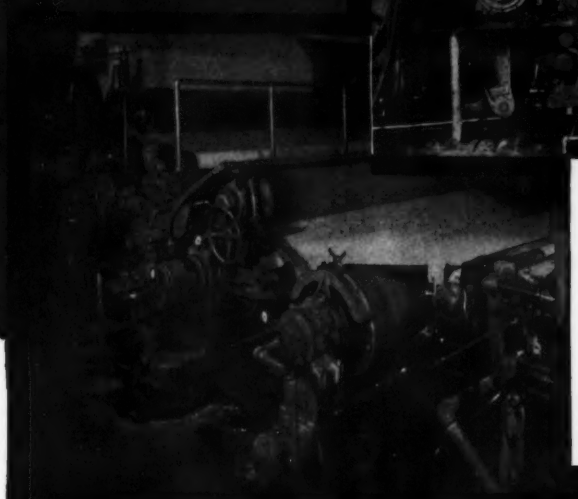
Paraffine Companies Earnings Off

Paraffine Companies, Inc., and subsidiaries for the quarter ended September 30, reports a net income of $391,488, equal after preferred dividends to 77 cents a share on 476,062 common shares, compared with $481,971, equal to 96 cents a share in quarter ended September 30, 1939.

Whitaker Votes $1 Dividend

Directors of the Whitaker Paper Company declared a dividend of $1 on common stock and the regular quarterly of $1.75 on preferred, H. F. Hew-

Improved!



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BELOIT IRON WORKS BELOIT WISCONSIN

itt, secretary, announced. This will bring payments on the common to $4 for the year. It is payable December 27 to stockholders of record December 24. The preferred payments will be made January 1 to holders of record December 14.

Oxford Nets $200,437

The Oxford Paper Company reports net earnings of $200,437 for the quarter ended September 30, with gain from operations before depreciation at $502,179. Other income totalled $26,467.

After setting aside $203,045 for depreciation, $45,649 for interest on bonds and serial notes, and $79,513 for provision for Federal taxes, the net earning figure of $200,437 is arrived at.

Net earnings for the nine months ended September 30 are $637,571, against earnings of $383,918 for a similar nine months period in 1939.

Johns-Manville Earnings Higher

The Johns-Manville Corporation and subsidiaries for the quarter ended September 30 reports a net income of $1,645,567 after taxes and charges, equal after preferred dividends to $1.80 a share on 850,000 common shares, compared with $1,472,255, equal to $1.58 a share in corresponding quarter of 1939, and $1,103,295, equal to $1.15 a share in quarter ended June 30; nine months $3,530,543, equal to $3.72 a share, year ago $2,675,999, equal to $2.69.

Badger Wood Pulp Co. Expands

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 28, 1940—The Badger Wood Plug Company, Appleton, Wis., has begun construction of an addition to its plant costing approximately $3,000. It will be 40 by 32 feet in size, and will be used for increased manufacturing space. Koepke Construction Company, Appleton, has the contract. The company makes wood plugs for paper rolls.

National Gypsum Nets $526,449

The National Gypsum Company for the quarter ended September 30 reports a net income of $526,449, equal after preferred dividends to 36 cents a common share, compared with $519,339, equal to 36 cents a share in corresponding quarter of 1939 and $517,090, equal to 36 cents a share in quarter ended June 30; nine months $1,055,084, equal to 67 cents a share, year ago $1,216,044, equal to 80 cents a share.

James E. Sensenbrenner Married

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., October 28, 1940—James E. Sensenbrenner, who is associated with the Marathon Paper Mills Company at Menasha, Wis., and Miss Lucille Osborne of Neenah, Wis., were married October 26 at St. Margaret Mary Catholic Church at Neenah. The couple will be at home after a wedding trip at 809 Racine street, Menasha. Mr. Sensenbrenner's father is R. M. Sensenbrenner, vice-president and general manager of the George A. Whiting Paper Company, Menasha.

Government Paper Bids and Awards

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 30, 1940—Stanford Paper Company has been awarded the contract for furnishing the Government Printing Office with 273,000 pounds (1,750,000 sheets) of 38 x 48, 25% rag, white bond paper at 9.07 cents, bids for which were received on October 14. Other paper awards announced by the Printing Office include the following.

National Pulp and Paper Company will furnish 200,000 pounds of newsprint paper in 48 inch rolls at 2.7 cents. Paper Corporation of U. S. will furnish 100,000 pounds of same at 3.33 cents. Aetna Paper Company will furnish 46,000 pounds (400,000 sheets) of 50% rag, 32 x 42 white bond paper at 9.89 cents. Graham Paper Company will furnish 97,500 pounds (3,000,000 sheets) of 21 x 32 white sulphite manifold paper at 7.75 cents. Bids for these items were received on October 9.

Mudge Paper Company will furnish 30,100 pounds (100,000 sheets) of 75% rag, 44 x 64 litho finish map paper at 11.98 cents and the same firm will also furnish 10,250 pounds (100,000 sheets) of same at 12.78 cents. Bids for these items were received on October 7.

Whitaker Paper Company will furnish 2,000 sheets of 20 x 24 red glazed paper at $11.55 per M sheets, bids for which were received on October 4.

Virginia Paper Company will furnish 5,290 sheets of 20 x 25 yellow gummed paper at $9.45 per M sheets. Marquette Paper Company will furnish 35,625 pounds (250,000 sheets) of 28 x 34 white sulphite ledger paper at 5.94 cents. Bids for both of these items were received on October 2.

Mudge Paper Company will furnish 120,750 pounds of 25% rag, 32 x 62 white bond paper at 9.37 cents. Stanford Paper Company will furnish 8,500 pounds of M.F. book paper in 38 inch rolls at 5.21 cents. R. P. Andrews Paper Company will furnish 40,250 pounds of 25% rag, 32 x 42 white bond paper at 10.39 cents. Aetna Paper Company will furnish same at 10.38 cents.

The Printing Office has received the following bids for 40,000 sheets paraffine manila paper; Whitaker Paper Company, $1.84 per M sheets; Mathers-Lamm Paper Company, $1.15; Mudge Paper Company, $1.02; Enterprise Paper Company, $1.023, $1.155 less 2%.

For 300,000 pounds of newsprint paper in 48" rolls; National Pulp & Paper Company, 2.7 cents; and Paper Corporation of U. S., 3.33 cents.

For 13,200 pounds (100,000 sheets) of 50% rag, 26 x 34 white passport paper; Old Dominion Paper Company, 13.479 cents; Barton, Duer & Koch Paper Company, 16 cents; and Mudge Paper Company, 13.34 cents.

Parsons Appoint Shapiro Corp.

Shapiro Paper Corporation, 350 Hudson street New York, have been appointed by Parsons Paper Company of Holyoke, Mass., distributors for its well-known line of L'Envoi. This is an all rag paper having a fine chamois finish lending a touch of elegance to a paper that is intended primarily for impressive business and professional stationery. L'Envoi is available in white and ivory in wove or laid. Envelopes to match are also carried in stock.

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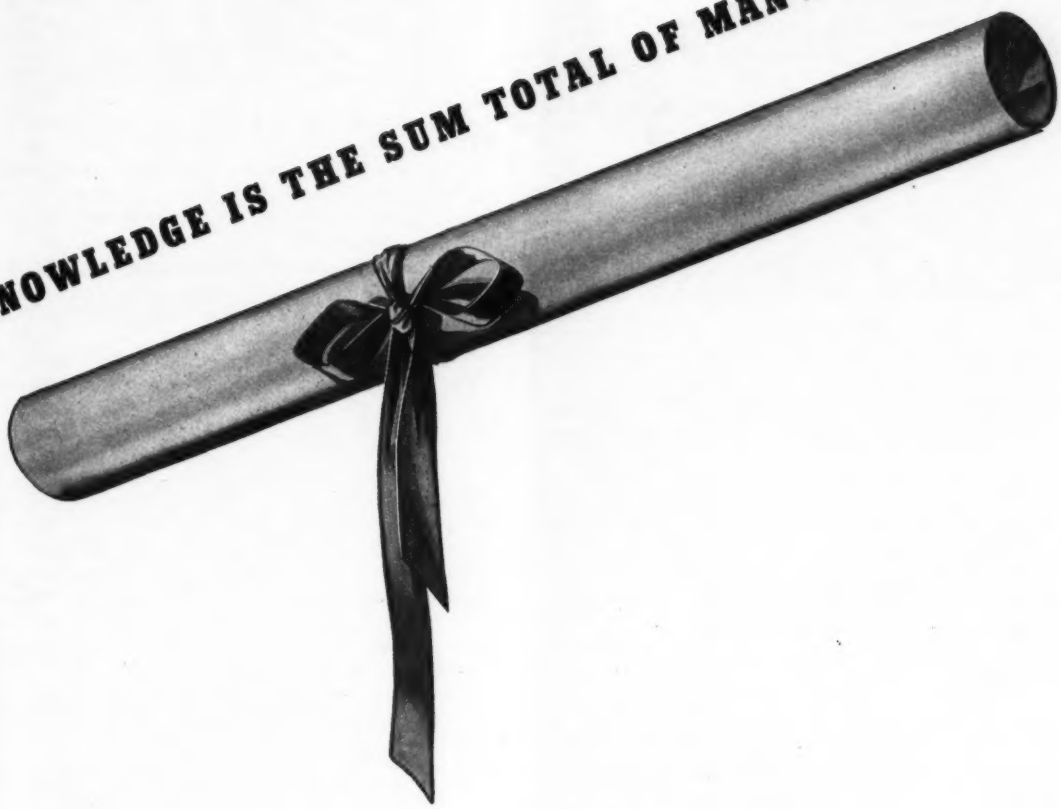

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CONSTRUCTION NEWS

Baltimore, Md.—The Hinde & Dauch Paper Company, 3400 East Biddle street, manufacturer of corrugated paper boxes and containers, has plans under way for new addition to local plant, to be one-story, about 32 x 180 feet, reported to cost over $30,000, with equipment. It is proposed to begin work at early date. Main offices of company are at Sandusky, Ohio.

Ridgefield, N. J.—The Lowe Paper Company, manufacturer of folding boxboard and kindred paper products, has completed plans for new addition to power house at paper mill on River road, consisting of a multi-story, steel frame structure, to be equipped for increased capacity. Award for structural steel has been made to the Oltmer Iron Works, 327 Manhattan avenue, Jersey City, N. J., and work is scheduled to begin at once. No estimate of cost has been announced.

Williamstown, Mass.—The Gevaert Company of America, Inc., 182 Cole avenue, manufacturer of special processed papers, films, etc., has begun work on proposed new addition to mill, recently referred to in these columns, consisting of a three-story and basement structure, about 61 x 92 feet, reported to cost close to $75,000, with equipment. It will be used for increased capacity. Erection contract is being carried out by Petricca Construction Company, 203 Pomeroy avenue, Pittsfield, Mass. Completion is scheduled around the close of the year.

Middletown, Ohio—The Crystal Tissue Company, manufacturer of tissue papers and allied stocks, has approved plans for improvements in power house at mill, and will carry out work at once. Various awards are being made for work, including removal of old steel stack to Littleford Brothers, Inc., East Pearl street, Cincinnati, Ohio; installation of pneumatic ash-removal system to the United Conveyor Corporation, 37 West Van Buren street, Chicago, Ill.; and for breeching for boilers, to Graves & Marshall Company, Dayton, Ohio. No estimate of cost announced. Walter I. Barrows, Reibold Building, Dayton, is consulting engineer.

Philadelphia, Pa.—The Industrial Corrugated Box Company, a new company in the city, has leased the building at 802 North Broad street, and will occupy for production, storage and distribution of corrugated boxes and containers. Company will take immediate occupancy and install necessary equipment and facilities.

Ridgefield, N. J.—The Standard Corrugated Case Corporation, 30th place and Hunters Point avenue, Long Island City, New York, N. Y., manufacturer of corrugated boxes and containers, has approved plans for new plant at Ridgefield, comprising a one-story unit, reported to cost over $50,000, including equipment. Award for structural steel framework has been let to H. R. Goeller, Inc., 470 Hillside avenue, Hillside, N. J., and work is scheduled to be placed under way soon.

Meridian, Miss.—The Flintkote Company, 50 West 50th street, New York, N. Y., manufacturer of roll roofing specialties, insulating board products, etc., has awarded general contract to the Rust Engineering Company, Clark Building, Pittsburgh, Pa., and Martin Building, Birmingham, Ala., for proposed expansion in new insulating board mill near Meridian, lately referred to in these columns. The award includes the installation of additional machinery and equipment, which will constitute a large part of program. The expansion is estimated to cost close to $1,000,000, with equipment. The Rust company has the award for present mill construction on which work is now in progress, with cost placed at $2,000,000, making a total investment of $3,000,000 for project.

Erie, Pa.—The Hammermill Paper Company, East Lake road, manufacturer of writing and other paper stocks, has completed plans for addition to power house at mill, consisting of a one-story bay, about 20 x 50 feet, to provide for increased capacity. General erection contract has been awarded to the H. Platt Company, 922 Raspberry street, Erie, and work is scheduled to begin at once. Cost reported close to $50,000, including equipment. A. S. Goodrich is company engineer, in charge.

Middletown, Ohio—Fire recently damaged a one-story building, used for storage and distributing service, at mill of the Sorg Paper Company, manufacturer of book, bond, tissue and other paper stocks. An official estimate of loss has not been announced. It is proposed to rebuild the structure at early date.

Berlin, N. H.—The Brown Company, manufacturer of kraft and other paper stocks, plans improvements in mill at Berlin, including buildings and equipment. It is proposed also to carry out similar betterments at branch mill at La Tuque, Quebec, Canada, given over to production of bleached and unbleached kraft fiber products. Work will begin at early date, following final arrangements for a loan of $10,000,000 from Reconstruction Finance Corporation, Washington, D. C., to be secured in connection with a reorganization of company, now approved by Federal Court at Portland, Me. Fund noted will be used for various purposes, including additional working capital and improvement programs stated, the latter to provide increased operating efficiency at mills and production.

Troy, N. Y.—The Behr-Manning Corporation, 10th avenue and 27th street, manufacturer of sand paper and other abrasive paper stocks, has completed plans for new addition to mill, to be four-story, estimated to cost over $75,000 with equipment. Contract for erection has been awarded to the Morton C. Tuttle Company, Park Square Building, Boston, Mass., and work will be placed under way at early date. Company is a subsidiary of the Norton Company, Worcester, Mass.

Martinsville, Va.—E. I. duPont deNemours & Co., Inc., duPont Building, Wilmington, Del., Rayon Division, has plans maturing for new synthetic fiber mill at Martinsville, about two miles from town, on Smith's River, where tract of 485 acres of land has been purchased, as recently noted in these columns. Company has awarded contract to the Bethlehem

Steel Company, Bethlehem, Pa., for structural steel framing for initial buildings, for which foundations will be laid soon. Mill will comprise several large one and multi-story main production units, storage and distributing buildings, power house, shops, pumping station and miscellaneous structures, and will require about 2200 tons of structural steel. It is estimated to cost close to $10,000,000 and will be completed late in 1941. Company engineering department is in charge.

Los Angeles, Cal.—The Thrifty Box & Carton Company, 2455 Cincinnati street, has been organized to operate a local plant for the manufacture of a line of paper boxes and containers. Company is headed by Jack Chase, address noted.

A. J. Siegel Returns from South America

Arthur J. Siegel, vice-president of Gottesman & Co., Inc., New York, returned over the last week-end from a circle flight around South America. Mr. Siegel visited the Panama Republic, Colombia, Ecuador, Peru, Chile, Argentine Republic, Brazil, Trinidad and a number of the West Indies in the trip by air from New York via Miami and return.

Mr. Siegel found the South American Republics anxious to do business with the United States and also noted a great appreciation in South America of the good quality of many American products.

ARTHUR J. SIEGEL STARTING HIS SOUTH AMERICAN TOUR

This trip around South America was only one of a number of long flights made by Mr. Siegel this year as he had previously, last spring, flown to Europe and back.

Gottesman & Co., Inc., as is well-known, are the selling agents for many American and Canadian producers of sulphite, kraft pulp and groundwood, included among these being the Southern Kraft Corporation, subsidiary of the International Paper Company; Eastern Corporation, operating the South Brewer and Lincoln, Maine mills, both making bleached sulphite, and the Orono, Maine mill producing unbleached sulphite; the Gaylord Container Corporation, St. Lawrence Paper Mills Company, Ltd., and Lake St. John Power and Paper Company, Ltd.

Gottesman & Company, Inc., have established agencies in most of the South American Republics to give their South American customers most efficient service even under the very difficult conditions now existing.

For about 69c a day

we improved quality with the

LOBDELL ROLL CALIPER

—light in weight, easy to handle, quickly adjustable to a wide range of roll diameters. Use it to keep constant check on calender and press rolls—insure against rejects from unsuspected wear. Use it to check re-grinding, too. ***Sizes to take 7" to 30" and 8" to 36" rolls for immediate shipment; speedily made to order for larger sizes.***

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PAPER TRADE JOURNAL
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Henry J. Berger
EDITOR

Vol. 111 October 31, 1940 No. 18

COMING EVENTS IN PAPER INDUSTRY

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—Second Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

BUSINESS GAINS

Industry and trade continues upward. Expenditures for national defense is an important factor in this acceleration of the momentum of general business and although those industries contributing the goods most essential to the armament of the nation are reporting the highest ratios of production, almost every line is being benefited by the current expansion of business activity.

The total expenditures of the government are large and as the policy is being followed of distributing them as widely throughout the country as practicable, more money is flowing to more communities this year than for many years, not only in the centralized industrial regions, but also into many cities of the interior. The increase in activity since the upturn last April has been about 20 per cent in five months. This is substantially greater than the advance during the same period last year and the rise has, of course, been more rapid than average upward movements. The expenditures for national defense have reinforced the normal uptrend and a very high rate of business activity is forecast, even if the European situation becomes more unfavorable.

The level of prosperity for this year is approximately that of 1930. According to Secretary of Commerce Jones, the dollar income of the people of the United States will exceed $74,000,000,000 this year, or $4,000,000,000 higher than last year. Mr. Jones announced on October 26 that September income payments to individuals amounted to $6,446,000,000, or 91.5 per cent of the 1929 average and the highest since June, 1930. The total for 1930 was $74,500,000,000. Income payments for the first nine months of this year aggregated $53,962,000,000, an increase of $2,894,000,000 over the like period last year. Secretary Jones said that although the population has increased about 7 per cent since 1930, the cost of living was about 15 per cent lower and that "the aggregate of income payments this year represents a much larger volume of purchasing than in that earlier year."

The gain in September income over August was stated as reflecting in large part the usual rise in dividend and interest payments. Salaries and wages amounted to $4,011,000,000 in September, an increase of 7 per cent over the same month last year. Dividends and interest totaled $897,000,000, an increase of $98,000,000 over last year. Industrial earnings of the first 150 industrial companies to report for the first nine months of this year, had a net aggregate income of $341,971,003, or an increase of 31.9 per cent over the $259,124,379 reported for the same period last year. According to the compilation made by *The New York Times*, the five leading companies that showed the greatest gains included the Abitibi Power and Paper Company, with an increase of $4,003,015 or 208.3 per cent.

In the upward expansion of industry and trade economists point out as a significant favorable factor the uptrend in commodity prices. As yet the increase has been small as reflected in the index of 813 commodities. The current trend is more marked, however, in the daily index of the Bureau of Labor Statistics including twenty-eight basic commodities which gained 0.3 per cent and rose to 113.3 per cent of the August, 1939 level, for the week ended October 25, which is the highest level since last May.

With the increase in production, reports indicate that consumer buying is increasing in general merchandise and in September sales to consumers were more than 8 per cent higher than the highest point reached last year. It is also reported that farm purchasing power is being maintained at the highest level since 1937 by better than average crops, Government payments and by fairly stable prices for agricultural products. The upward expansion of industry and trade indicates that activity in the remaining months of this year will likely exceed the high rate of last year. This is reflected in several indices which measure commercial and financial transactions, and which have continued to show slight increases in almost every recent week over the corresponding period of last year.

Fear that industry may be conscripted is one of the unfavorable factors in the present business situation and the necessity of maintaining a sound domestic economy was brought out by James S. Kemper, president of the Chamber of Commerce of the United States at a recent meeting. He urged that defense preparations not be made an excuse for the furtherance of pet economic theories, with an increase in the type of governmental control that cannot but weaken our economic defense. Mr. Kemper said in part: "Ours is a mighty nation, with a greater

industrial machine and more natural resources than all the aggressor nations combined. The surest way to protect ourselves against any menace from abroad is to perfect our internal economy and to stimulate the ingenuity and daring that have made America great. . . . One of the great tragedies of the thirties was the large-scale and deliberate introduction into our social structure of a class consciousness which today is taking a heavy toll against that unity of thought and action that has been our pride as Americans."

Mr. Kemper went on to say that "There should be no wedge driven between the business man on the farm and the business man in the offices; between the employer and the employee; between small business and large business; between industrial areas and agricultural areas; between the East and the West; or between business on the one hand and society on the other. . . . It is a criminal thing to divide this great people into mutually suspicious and self-conscious classes; and those who have been guilty of such tactics are not worthy to be called Americans. So far as business is concerned, we recognize no such distinctions. In America we all are in business in one capacity or another; and whether we survive or not will depend on the extent to which we understand and defend the fact that this is a business nation".

High Production, But Low Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 30, 1940—Although pulp production in 1939 was 6.6% above 1937, lower prices resulted in a 8.2% decrease in value of products during the same period, the Census Bureau reports.

Pulp production in 1939 totaled 7,153,478 short tons compared with 6,713,576 short tons in 1937. The pulp produced in 1939 was valued at $222,812,085 compared with $242,443,451 in 1937.

Wage earners decreased 0.5% between 1937 and 1939 while wages declined 1.3% during the same period. The wage earners numbered 26,870 in 1939 compared with 26,994 in 1937.

The same number of plants—194—were in operation in 1937 and 1939.

Wood pulp accounted for the bulk of tonnage in this industry with 6,993,334 short tons out of the total of 7,153,478. Sulphate fiber pulp accounted for 2,962,657 short tons of the wood pulp tonnage produced last year.

K.V.P. Moves Boston Office

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., October 28, 1940—The New England office of the Kalamazoo Vegetable Parchment Company is now in larger quarters at 51 Sleeper street and nearer the warehouse so as to give better service.

F. H. Masselink is manager. The former office address was at 10 High street.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES[1]

Months	1940	1939	1938	1937	1936	1935	1934
January	90.2%	77.5%	63.9%	90.3%	76.1%	65.8%	.....
February	86.2%	81.7%	68.7%	90.1%	77.9%	70.0%	.....
March	83.9%	84.0%	69.6%	90.3%	76.0%	70.5%	.....
April	86.3%	82.9%	68.3%	92.1%	82.3%	70.0%	.....
May	91.8%	80.2%	69.0%	90.6%	81.6%	69.4%	.....
June	93.8%	79.7%	66.0%	87.3%	80.7%	72.3%	.....
July	87.1%	75.2%	72.0%	81.8%	77.3%	64.9%	.....
August	87.3%	82.9%	77.2%	82.9%	81.5%	70.9%	.....
September	83.3%	88.7%	76.3%	78.6%	80.5%	71.9%	58.2%
October	.....	96.6%	82.5%	73.5%	87.6%	75.6%	64.7%
November	.....	97.2%	79.6%	61.9%	88.0%	75.3%	61.7%
December	.....	91.1%	74.4%	54.5%	85.9%	71.2%	59.6%
Year Average	.....	84.9%	72.3%	80.6%	81.3%	70.5%	.....
First 42 weeks	88.0%	82.6%	71.0%	86.0%	80.0%	69.8%	.....

COMPARATIVE WEEKLY SUMMARIES[1]

CURRENT WEEKS, 1940		CORRESPONDING WEEKS, 1939	
September 14	86.3%	September 16	91.8%
September 21	87.2%	September 23	93.4%
September 28	89.4%	September 30	95.7%
October 5	87.9%	October 7	93.0%
October 12	89.1%	October 14	96.9%
*Octboer 19	89.2%	October 21	98.6%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting—Current Weeks					
Ratio Limits	Sept. 14, 1940	Sept. 21, 1940	Sept. 28, 1940	Oct. 5, 1940	Oct. 12, 1940	Oct. 19, 1940
0% to 50%	53	51	44	46	46	41
51% to 100%	245	246	249	236	230	204
Total Mills Reporting	298	297	293	282	276	245

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1936	62%	67%	67%	70%	69%	70%	69%
1937	80%	86%	86%	88%	85%	77%	66%
1938	54%	60%	61%	57%	58%	56%	57%
1939	60%	67%	71%	69%	64%	67%	63%
1940	71%	70%	69%	70%	76%	79%	72%

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	75%	78%	82%	80%	74%	72%
1937	74%	69%	65%	55%	45%	73%
1938	66%	66%	70%	65%	59%	61%
1939	72%	74%	84%	81%	71%	70%
1940	74%	72%	....	....	....	....

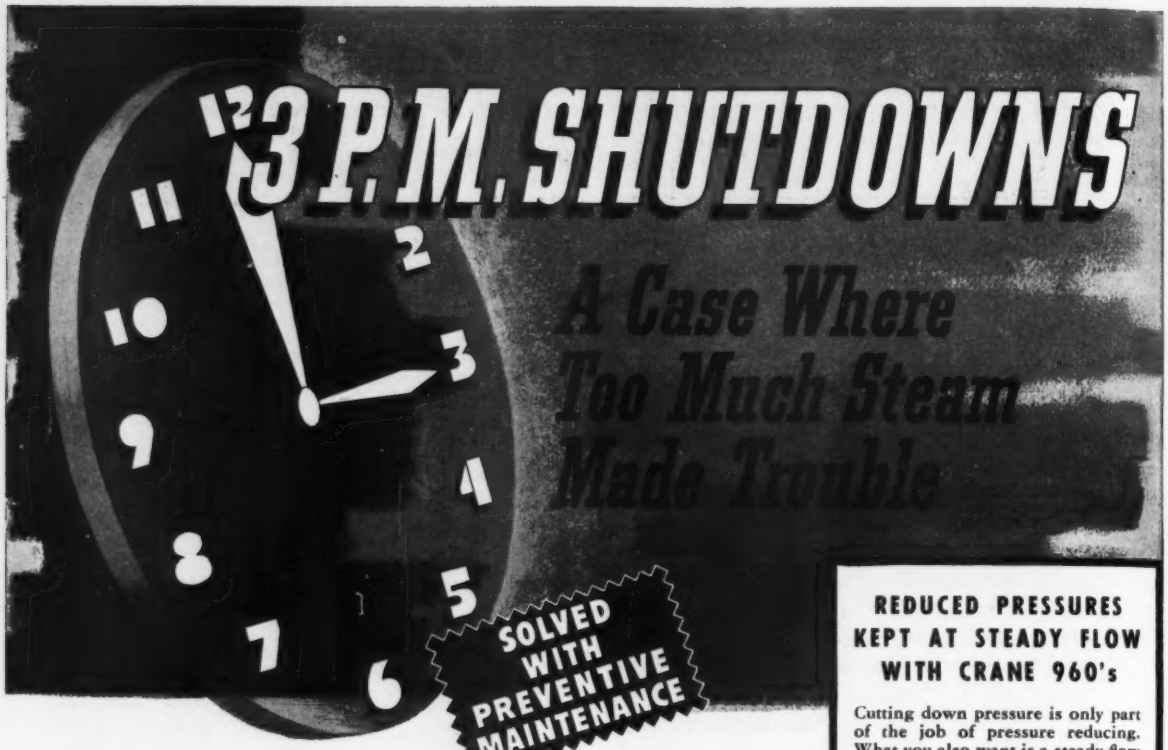
Week end. Sept. 14, 1940—76%
Week end. Sept. 21, 1940—74%
Week end. Sept. 28, 1940—78%
Week end. Oct. 5, 1940—78%
Week end. Oct. 12, 1940—79%
Week end. Oct. 19, 1940—78%

[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are subject to revision until all reports are received.
* Preliminary figure.

D. W. Haering & Co. to Expand

A plant to supplement the present manufacturing facilities of D. W. Haering & Co., Inc., Chicago, Ill., manufacturers of quachrom glucosate and other water treating compounds will be constructed in the Texas Gulf Coast Area. Costing approximately $25,000, the new plant will convert raw materials into intermediate and finished products. The new plant will include storage and shipping facilities and a large volume of sales will be filled and handled from this point. The excellent rail and water transportation available in this area will permit the rapid dispatch of finished products to consumers west of the Mississippi River. The Chicago plant will continue to serve in its present capacity.

The west coast will be served by a new laboratory to be established early in 1941 at Los Angeles or San Francisco. The definite location will be determined by a business survey being conducted by the Company.



"YOU'LL have to shut down at three today," the Superintendent of a northwestern wood-working plant said to his shop foreman. ". . . Kiln's tied up again with heating trouble!"

The plant was swamped with orders—like many another shop today. And repeated valve trouble in the steam line at the kiln meant falling farther behind on deliveries.

Preventive Maintenance was the only answer. For it's the only way of solving piping problems permanently. Yet, Preventive Maintenance is a simple technique—just a matter of *being sure* the installation is right, and the valves and fittings the best for service conditions.

The Superintendent saw the waste in ordinary repair—he called in H. E. O., the Crane Man. His wide experience would help to remedy the trouble quickly and surely.

Here's what the two men found: Steam was piped from the boiler with a four-inch line equipped with a four-inch pressure-reducing valve. And there was the source of the trouble! The valve was much too large. It couldn't operate properly at the low pressure setting required. Severe wire-drawing cut the seat and disc. The valve leaked—pressure went up—the kiln temperature couldn't be controlled.

Preventive Maintenance counseled replacement with a two-inch pressure regulator. It would give ample steam for heating the kiln. It would give finer control without restricting operation of the automatic valve mechanism. A Crane No. 960 brass regulator was put in the line.

Results: No more interruption of kiln operation; no more shop time lost for lack of material. Another plant superintendent knows the value of Preventive Maintenance. Also knows the Crane Man can help him get most for piping maintenance dollars. Because Crane is not only the source of valves and fittings for every service, but of accurate information on their proper application as well.

This case is based on the personal experience of H. E. O., a Crane Representative in the St. Paul Branch.

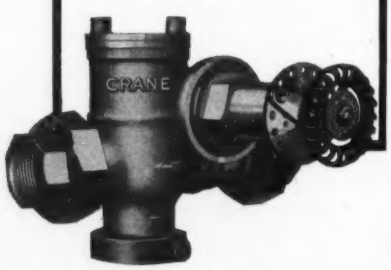
REDUCED PRESSURES KEPT AT STEADY FLOW WITH CRANE 960's

Cutting down pressure is only part of the job of pressure reducing. What you also want is a steady flow in the service line. You get both in these sturdy-built Crane No. 960 Brass Pressure Regulators for steam or air.

The 960 is ideal for Preventive Maintenance on modern process lines—on vulcanizers, cookers, driers, paper machines, air tools, air blasts, in heating systems.

Unlike ordinary reducing valves, the Crane 960 maintains reduced pressure at the point desired regardless of how much steam or air is being used. It will not permit pressure build-up when service line is idle.

Crane 960's are available for reduced pressure ranges of 5 to 30 pounds and 31 to 200 pounds. Operation is simple; ready accessibility permits easy inspection and servicing. In 6 sizes up to 2". Page 415 of your Crane No. 52 Catalog gives complete specifications.



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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Radiant Heat Drying of Paperboard

By R. W. K. Ulm[1]

Abstract

Experiments are described and results presented which demonstrate that heavy paperboard can be dried by the use of radiant heat lamps. However, this method does not seem as economical as the present drying methods, but might in some specialized cases show advantages which would overbalance the additional cost of operation.

In the high moisture content range, i.e., above 60 per cent dry, the time rate of drying is constant; drier than this the drying rate decreases at a rate which is inversely proportional to the time of heating.

For some time certain industries have been utilizing radiant heat in their drying operations with excellent results, a notable example of which is the Ford Motor Company's use of heat lamps for lacquer drying.

In many paper mills wetends are capable of more production, but drier capacity is insufficient. The installation of additional driers is expensive, and in some cases impossible due to space limitations. Therefore, the idea was conceived that perhaps the use of heat lamps might be the means of increasing drier capacity without costly mechanical changes. Accordingly, to determine the value of this idea, the preliminary experiments herein described were carried out.

Experimental

Gold reflector lamps, such as are used by the Ford Motor Company, and the newer heat lamps built with internal reflectors were both available, but the latter were chosen, because they yielded a greater concentration and a more uniform distribution of heat.

An apparatus was designed to determine the rate of drying under controlled condition of illumination and ventilation. The illumination from each side consisted of four 250-w. heat lamps mounted in the form of a square on a movable panel on 5½-in. centers. The sheet was suspended vertically from a balance in a chimney made of corrugated board which screened off stray air currents. On each side of the chimney were 12 by 12 in. openings for the illumination. Directly underneath the sheet position was the nozzle of an air duct which was used to give ventilation to the sheet parallel to the sheet surface in certain experiments.

For an experimental run the specimen sheet (6 by 6 in.) was dried in an oven, weighed, then soaked for an hour in water. When removed from soaking vessel the excess surface water was removed by blotting and the sheet suspended in the apparatus with its center on the center line of the illuminating panels, so that it received practically one-fourth of the total illumination. The usual procedure was to measure time from the start of the illumination for the loss of water in one-gram steps for the first six grams and thereafter in two-gram steps until the end of the run. The sheets were never carried to the moisture-free condition, because before this condition could be reached the surface of the sheet would become excessively hot.

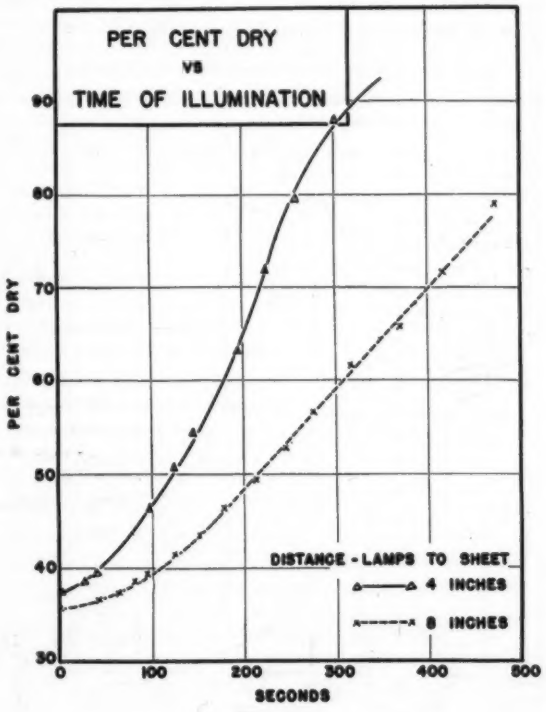

FIG. 1.

[1] Member TAPPI, Ohio Boxboard Co., Rittman, Ohio.

Experiments were carried out to determine the effect of distance of the lamps, the effect of ventilation on sheet temperature, the effect of ventilation on the rate of drying, and the effect of air quality on the rate of drying.

Results and Discussion of Results

The first experiments were concerned with the effect of the distance from the lamps to the sample on the rate of drying. The results are plotted in Figs. 1 and 2. Figure 1 shows the percentage dry (the moisture-free content calculated on the wet basis) plotted against the time of illumination. It is to be noted that the closer the lamps the faster the drying. This is substantiated by Fig. 2 which shows the water content of the sheets expressed as grams of water per gram of moisture-free board against the time of illumination. By this method of plotting it is shown that the straight line drying (i.e. drying at a constant rate) exists from about 20 seconds to somewhat more than 200 seconds after which the rate of drying decreases. The slope of the straight line portion is a measure of the rate of drying, the steeper the slope the faster the drying. The rates for the straight line portions are expressed mathematically as follows:

$$\text{at 8 in.} \ldots\ldots\ldots\ldots \quad \frac{dw}{dt} = -0.004$$

$$\text{at 4 in.} \ldots\ldots\ldots\ldots \quad \frac{dw}{dt} = -0.0065$$

For the falling rate portions the rates for both distances are:

$$\frac{dw}{dt} = -\frac{K}{t} = -\frac{.87}{t}$$

All subsequent experiments of this series were carried out with the lamps 4 in. from the sample.

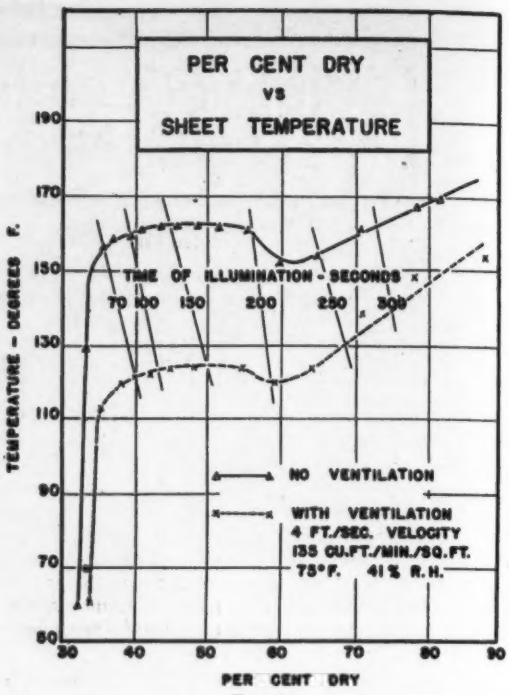

FIG. 3.

The fact that distance has an effect upon the rate of drying indicates that the lamps were not radiating as large a percentage of parallel heatwaves as desired. Reflectors designed to give more parallel illumination are now available, and further experiments of this nature are contemplated.

On one run a microthermocouple was inserted in the middle of the sheet and connected to a sensitive millivoltmeter so that the temperature at this point

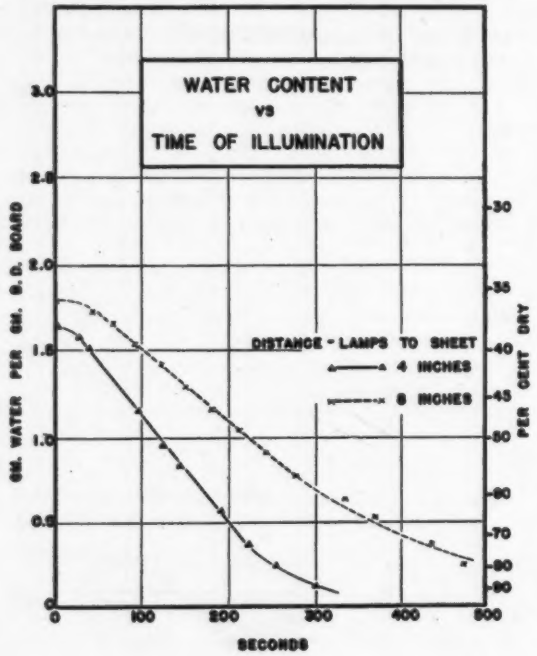

FIG. 2.

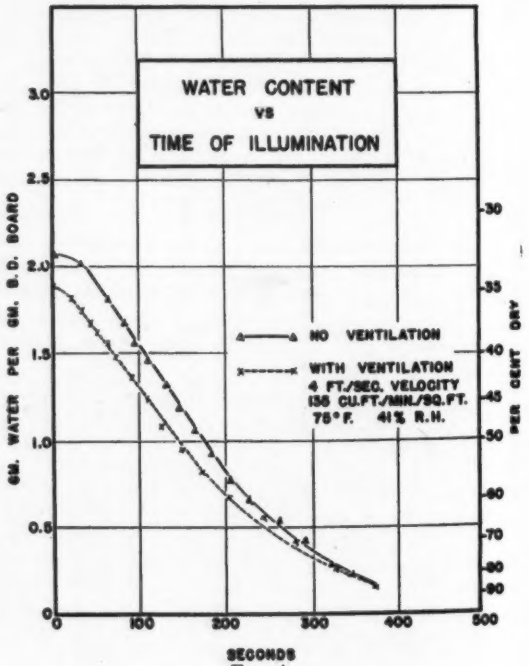

FIG. 4.

could be taken during the run. One run was made without ventilation, another one with ventilation which was measured to be 4 f.p.s. velocity and a volume of 135 c.f.m. per sq. ft. of board. These experiments were carried out in the humidity room at 41 per cent r.h. and 75 deg. F. The results are shown in Figs. 3 and 4. In Fig. 3 it is shown, that the center of the sheet heats up rapidly until a certain point is reached, whereupon the temperature remains constant for a time, then falls somewhat to begin a constant rise. Comparison with Fig. 4 will show that this period of constant temperature is practically identical with the period of constant rate drying (straight line on Fig. 4).

Here, one rather astonishing fact becomes apparent. The slope of the no ventilation curve is, if anything, slightly steeper than the slope of the ventilated drying curve. This means that the sheet which was not ventilated dried slightly faster than the sheet which was ventilated. This result was doubted until substantiated by later experiments (Figs. 5 and 6). From Fig. 5, which plots the water content against time of illumination, there can be little doubt that the velocity and quantity of the air used for ventilation has little effect on the radiant heat drying as carried out in this apparatus.

These observations have been explained by assuming the heat reaching the sheet to be divided into two parts which (1) evaporates the water and (2) raises the temperature of the air adjacent to the sheet. Since the total quantity of heat received by the sheet is determined by radiant heat absorption, it is to be expected that this will be independent of ventilation. Drying theory predicts that increased ventilation should increase the rate of evaporation, but it should also increase the loss of heat to the passing air both of which would tend to decrease sheet temperature and thus decrease the rate of evaporation. It is perhaps a coincidence that these

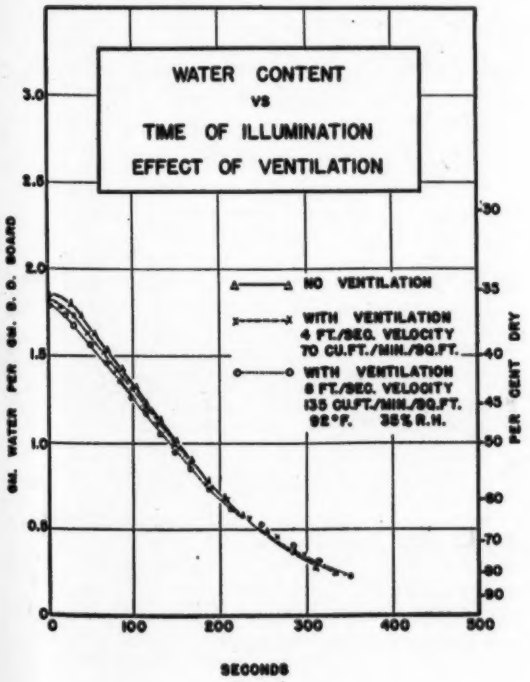

FIG. 5.

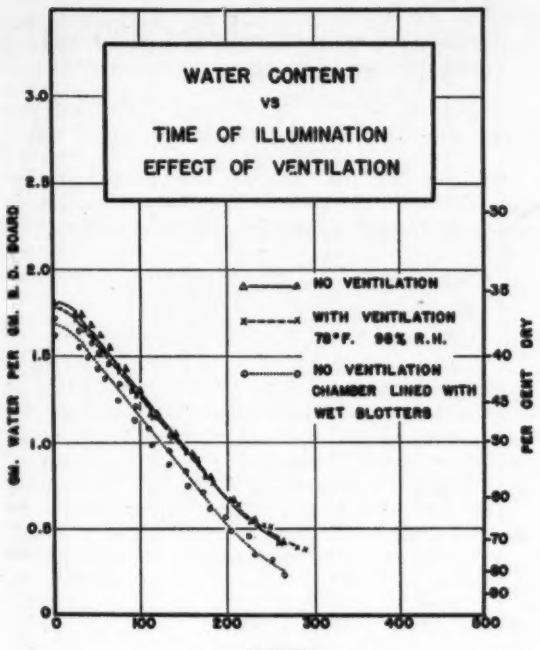

FIG. 6.

effects are equal and opposite in all the experiments undertaken. However, it is felt that the data are insufficient to support a further mathematical analysis of these factors.

A practical evaluation of the results shows that the radiant heat method is inefficient when compared to the usual method of paper drying. On the paper machine approximately 2.5 lb. of steam or 2500 B.t.u. are required to dry a pound of paper. From Fig. 1 it seems that the sheet can be dried about the same amount in 350 sec. by infrared heating. This sheet was illuminated by eight 250-w. lamps but covered only ¼ of the area illuminated and, therefore, intercepted the heat of ½ k. w. This calculates to 0.049 k.w. hr. for drying. This sheet weighed about 16 grams per ¼ sq. ft. or 0.035 pound. Carrying the calculation further, the infrared drying requires 167 B.t.u. per ¼ sq. ft. or 4800 B.t.u. per pound. It is expected that practical installations might show considerably better efficiencies for radiant heat drying.

Relative local costs of steam and electricity would then determine the economic feasibility of such an installation.

To Collect Waste Paper in Hungary

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., October 30, 1940—Hungarian Ministry of Industry by a decree authorized certain organizations to collect waste paper, according to a report from the American Legation, Budapest, Hungary. The new organization is to be known as the "Hungarian Association for Acquiring Raw Material for the Paper Industry." Sales prices of waste paper will be set by the Government Price Fixing Bureau. The new organization will work under the supervision of the Ministry of Industry and a special Government Commissioner will be charged with supervision.

Pentosans in Paper

TAPPI Suggested Method T 450 sm-40

In this method the furfural formed by the action of hot hydrochloric acid on the fibrous material is distilled from the mixture in essentially the manner prescribed by the A.O.A.C. *(3)*. The distillates are analyzed for furfural by a rapid volumetric procedure requiring no complicated apparatus. The volatile material, probably hydroxymethylfurfural, arising from the action of HCl upon the cellulose in the samples is corrected for in a simple manner. The correction, 0.9%, expressed as a pentosan, was found to be valid for the typical chemical wood fibers and papers made therefrom, including unbleached sulphate. For materials containing large quantities of lignin, such as newsprint, the correction is probably too low. A correction is also applied for the loss of furfural during the distillation. For further details as to these corrections, or for general information as to the method described, the analyst is referred to Launer and Wilson *(1)*, who also show that the pentosan values for cotton fiber are negligible, being probably less than 0.2%.

Apparatus

The special apparatus required for this test is a disintegrator which will completely disintegrate the sample without heating or contaminating it. A Koerner type *(2)* or its equivalent shall be used.

For the distillation a 300-cc. separatory or dropping funnel is mounted in the neck of a 500-cc. distilling flask, which in turn is connected to a long water-cooled condenser. The condenser delivers through an adapter into a 1-liter reagent bottle which is used as a receiver and subsequently as a reaction vessel. Rubber stoppers may be used to make the connections. If the temperature of the condensate in the receiver is 30 deg. C. or over, owing to inefficient cooling or high laboratory temperature, a small U-trap, containing glass beads and 5 cc. of water, should be used to close off the systems.

Reagents

(a) Hydrochloric Acid, 3.5 *N* (12%). Dilute 307 cc. of C.P. conc. HCl (sp. gr. 1.18 — 1.19) to one liter.

(b) Ice, preferably frozen from distilled water. Ordinary commercial ice is satisfactory if uniform values for the blank determinations (see below) are obtained with it.

(c) Potassium Iodide Solution, 10%. Dissolve 10 grams of C.P. KI in 90 grams of water.

(d) Sodium Thiosulphate Solution, 0.1 *N*. Dissolve 25.3 grams of C.P. $Na_2S_2O_3 \cdot 5H_2O$ in water containing 1 cc. of 1 *N* NaOH and dilute to one liter. This gives a solution slightly stronger than 0.1 *N*, but subsequent calculations are thus made easier. After one week, standardize the solution against 0.1 *N* permanganate as follows:

Add 120 cc. of approximately 6 *N* H_2SO_4 to 320 cc. of water in a 1-liter glass-stoppered reagent bottle. Follow with 10 cc. of 10% KI solution and then, after shaking, add 50 cc. of standard 0.1 *N* $KMnO_4$ solution from a pipette. After shaking again, titrate with the thiosulphate solution, adding starch indicator toward the end of the titration.

(e) Potassium Bromate-Bromide Solution, 0.2 *N*. Dissolve 5.57 grams of C.P. $KBrO_3$ and 50 grams of C.P. KBr in water. Add 1 cc. of *N* NaOH and dilute to one liter. The solution is not standardized, but blank determinations against the thiosulphate solution are made at intervals, as described below.

Test Specimen

The test specimen shall be representative of the sample, and shall be reduced to cotton-like form in the disintegrator and then thoroughly mixed.

Procedure

Allow the sample to come to moisture equilibrium with the atmosphere of a balance. Weigh, to the nearest milligram, one gram of the ground, airdry material for the pentosan determination. Weigh at the same time specimens for the determination of moisture, ash, and sizing materials. Introduce the test specimen into the distilling flask through a clean, dry glass tube so as to avoid adherence of fibers to the neck of the flask. Add 100 cc. of 3.5 *N* HCl to the flask, marking the flask to indicate this volume. Then fit the dropping funnel, containing 300 cc. of 3.5 *N* HCl, in the neck of the flask and apply heat from a burner. As soon as distillation begins, let the acid drip from the funnel at such a rate that the level in the flask remains constant. Continue the distillation at a uniform rate for 100 minutes, during which period 300 cc. of condensate should have been collected. It is important to observe time and quantity.

Add 50 cc. of water to the condensate (if a trap was used, as described above, combine its contents with the condensate and add correspondingly less water) and then add 250 grams of crushed ice. After the temperature of the mixture has fallen to 0 deg. C. or lower, add 20 cc. of 0.2 *N* bromate-bromide solution from a pipette with minimum agitation, close the bottle promptly with a ground glass stopper, shake well, and let stand for exactly 5 minutes. The temperature should still be 0 deg. C. or lower. Then remove the stopper, add 10 cc. of 10% KI from a small graduate and replace the stopper as quickly as possible. Shake the mixture thoroughly to allow absorption of the bromine vapor, and titrate with 0.1 *N* thiosulphate solution until colorless.

Determine the blank in exactly the same manner using all reagents including the ice, except that the starting point is 270 cc. of 3.5 *N* HCl, diluted to 350 cc., instead of 300 cc. of condensate + 50 cc. of water.

Calculation of Results

The pentosan content of papers is calculated by substitution in the following expression:

$$\text{Pentosans, } \% = \frac{6.80\ N\ (v_2 - v_1)}{W} - 0.9$$

where N = normality of thiosulphate solution
v_1 = volume of thiosulphate solution used in the test

v_2 = volume of thiosulphate solution used in the blank

W = weight of the specimen after correcting for moisture, ash, and any filling and sizing materials present.

Note: The significance of the constant 0.9 has already been explained. The factor 6.8 is the product of 100 x 1.03 x 0.048 ÷ 0.727, where 1.03 corrects for a 3% loss of furfural during a distillation, 0.048 is the weight of furfural in grams corresponding to 1 cc. of N thiosulphate solution, and 0.727 is the theoretical conversion factor of pentosans to furfural. If the analyst desires values which are comparable with those obtained by using Krober's tables, in which the conversion of pentosans to furfural is arbitrarily taken as 80%, the factor becomes 8.25 and the constant 0.9 is neglected.

Report

The pentosans shall be reported as a percentage of the total cellulose, including pentosans but excluding moisture, ash (fillers), resin, or any other added nonfibrous materials. All determinations of pentosans shall be made in duplicate, the results of which shall agree within at least 0.4, and the average shall be expressed to the nearest 0.1.

Literature Cited

(1) Launer and Wilson. "Determination of pentosans in pulps and papers." *J. Research Natl. Bur. Standards* 22, 471 (1939), *Research Paper* RP1199.
(2) Burton and Rasch. "The determination of the alpha-cellulose content and copper number of paper." *J. Research Natl. Bur. Standards* 6, 603 (1931), *Research Paper* RP295.
(3) Assoc. Official Agricultural Chemists, "Methods of Analysis," 4th ed. (1935), p. 344.

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Wehmer, P. F. "Hydrogen ion concentration and pentosans." *Tech. Assoc. Papers* 23, 56-446 (June, 1940).

New Clay-Handling Device Tried

CHILLICOTHE, Ohio, October 28, 1940—With the completion of a conveyor system for clays used in paper manufacture at the Chillicothe Paper Company, a new step in the handling of this product was introduced for the first time in any factory in America by the Edgar Brothers Company of New York. The Chillicothe Paper Company received the first shipment of clay to any producer in the nation in a new type of 50 ton tank car.

In the presence of officials of the Edgar Brothers Company, the car was given its initial test here under practical production conditions, and proved the convictions of J. L. Williams, traffic manager of the New York company, that clays could be handled efficiently and economically in the tank car. Mr. Williams' experiments with the car have been backed by officials of the Chillicothe Paper Company who have been closely identified with its development.

It was explained by O. W. Callighan, sales engineer of the Edgar Brothers Company, that former methods of handling clays have never been satisfactory. The clay is shipped from Georgia, where most of it is obtained, in box cars and unloading of these cars proved an expensive and difficult task. No matter how carefully it was handled, a considerable amount of dirt and dust filtered in and later caused trouble.

The tank car, which is sealed against the outside air, eliminates this trouble. Unloading is a simple matter, since the car is centered over a conveyor, the bottom traps opened, and under air pressure, the dust-like clay is forced into screw lines which deposit it in the factory reservoirs.

Unloading of 40 to 50 tons of clay now is completed in approximately an hour, Hector McVicker, president of the Chillicothe Paper Company, explained. Formerly it required two men about two days to unload a car of clay dust.

Following the demonstration of its practicability here, however, it is expected that other paper manufacturers and many companies using clay, will adopt the system.

The conveying system installed at the local plant was built in Columbus and supplied by C. G. Landis, Columbus, according to Russell McVicker, vice-president of the concern.

Lumbering Extensive in Adirondacks

LYONS FALLS, N. Y., October 26, 1940—Extensive lumbering operations are under way in various parts of the Adirondacks which will provide pulpwood for several of the large paper mills in Northern New York. Operations on the Moose River include the skidding of 25,000 cords for the mills of the Gould Paper Company, of this place. A cut of 10,000 cords being handled by Elmer Bernier will be hauled by tractors to Fish Creek and later trucked to the mills here. John D'Avignon, a contractor of Tupper Lake, is skidding about 6,000 cords of pulpwood on lands of the International Paper Company below Piercefield. The timber is to be trucked to the Racquette River Paper Company, at Potsdam. Stanley Sisson is directing the skidding of about 8,000 cords on land of the Racquette River Paper Company, a few miles from the Tupper Lake highway, which is to be trucked to the Corinth mill of the International Paper Company. Near St. Regis Falls, the Elliott Hardwood Company has a contract for 5,000 cords which will be trucked during the winter to the Potsdam mill of the Racquette River Paper Company. Finch, Pruyn & Co., of Glens Falls, has a series of camps operating in the area around Newcomb. Peeling operations were completed in August and skidding has been under way for several weeks. It is expected that about 35,000 cords will have been taken from the various camps early in November. A contract for 18,000 cords is being handled by Clarence Strife on lands of the Adirondack League Club to be trucked to paper mills at Beaver Falls and Brownville. Charles Tate, of Tupper Lake, has been cutting and skidding about 1,800 cords of pulp wood near St. Regis Falls which is to be hauled to the Norfolk mill of the St. Regis Paper Company. Other sizeable logging jobs under way include the Jerseyfield operations of Johnston & Son where skidding has begun on a contract for 20,000 cords; a cut of 2,000 cords by the Little Rapids Lumber Company in the Stillwater area and a job calling for 4,000 cords near Fourth Creek. About 1,500,000 feet of timber will also be cut and trucked this season to mills at Potsdam owned by the Elliott Hardwood Company.

New Literature

Extended inner ring ball bearings are described in Bulletin 740, issued by the Stephens-Adamson Manufacturing Company, Aurora, Ill. This is a recent addition to the company's line of "Sealmaster" ball bearings. The bearings are available in fractional inch dimension bores, pre-lubricated and permanantly sealed. Shaft diameters and list prices are included.

Acid-proof brick and tile is the subject of a folder issued by the Harbison-Walker Refractories Company, 1800 Farmers Bank Building, Pittsburgh, Pa. It explains the merits of the company's "Duro" brick and tile, which is dense, vitreous, non-absorbent and strongly resistant to the action of solvents.

The "Coloring Matter" of Kraft and Its Influence in Bleaching*

By Harry Schwartz, Joseph L. McCarthy[1] and Harold Hibbert[1]

Abstract

Previous views indicating that the so-called coloring matter of kraft pulp is a phlobatannin has been investigated.

The authors' new experimental evidence indicates that the difficulties met with in bleaching kraft pulp to a high degree of whiteness are not due to the presence of the colored material isolated by previous workers and their statement that such materials are responsible for a very high chlorine-demand are also unfounded. The new data submitted indicate that the difficulties met with in bleaching kraft pulp are due to the presence of lignin and its degradation products, the latter formed during the processes of cooking and bleaching.

Some authors believe that alkaline pulps, particularly kraft, are difficult to bleach to a high degree of whiteness primarily because of the presence of some coloring matter highly resistant to the action of aqueous chlorine solutions. The residual lignin in the pulp is thought to play only a secondary role.

Many theories relating to the nature of such an assumed coloring matter have been put forward. For example, Griffin *(1)* suggested that alkaline liquors contain resinous soaps which on hydrolysis form firmly-fixed resinous residues on the fibers during the washing process. Rue *(2)*, similarly, proposed that decomposition products attach themselves firmly to the fiber and stubbornly resist removal by the action of hypochlorites. Curran and Baird *(3)* suggested that a dye, probably the keto form of a polyhydric phenol or its derivative, causes the difficulty. Few of these theories can be given serious consideration since they are based on little, if any, experimental evidence.

The first serious investigations directed toward the isolation and characterization of a coloring matter in kraft pulp were carried out by Kuettel *(4)* and by Holzer *(5)*, who isolated colored materials from both kraft black liquor and kraft pulp and claimed their products were the actual coloring matter. From a very slightly acidified solution of kraft black liquor obtained from slash pine, Kuettel *(4)* isolated a colored material which he concluded was a phlobatannin or derivative. He considered that colored materials from other sources such as flavones, lignin and its degradation products, sulphur dyes formed during kraft pulping, the yellowing action of alkalies on pulp, and the iron derivatives in the cooking liquors, have only a secondary influence on the degree of whiteness of kraft pulp and ease of bleaching. Holzer *(5)* extracted from pine kraft pulp by means of acidified amyl alcohol a material which, from color absorption curves, he believed to be identical with the product isolated by Kuettel from black liquor. Organically-bound sulphur was present (0.78% S), and from this and certain other observations he developed a theory that the coloring matter in kraft pulp is a sulphur dye probably formed from a phlobatannin, stipulating, however, that the coloring matter might possibly arise from the lignin, although this was believed doubtful.

The term coloring matter as generally understood by papermakers refers only to a substance present, or assumed to be present (in pulp) different from lignin, and which actually causes difficulty in bleaching the pulp to a high degree of permanent whiteness. It is believed responsible for the consumption of relatively large quantities of chlorine. Although Kuettel and Holzer claim to have isolated such a coloring matter, it appeared to the writers that there is an adequate explanation of the difficulty found in bleaching alkaline pulps without the assumption of the presence of a nonligneous coloring matter. They consider that, of the many factors bearing on the complex process of bleaching, the influence of lignin and degraded lignin products formed during the alkaline cooking and chlorine bleaching process should be regarded as of primary importance.

It therefore seemed desirable to investigate further the products described by Kuettel and by Holzer in order to determine whether or not these materials actually represent, in the above sense of the term, the actual coloring matter present in kraft pulp.

The products isolated by Kuettel and by Holzer from kraft black liquor and kraft pulp, and called by them the coloring matter will in this paper be described as the *black liquor extract* and the *kraft pulp extract* respectively.

Isolation and Characterization of the "Black Liquor Extract"

The first phase of this investigation involved confirmation of the existence of the black liquor extract as isolated and described by Kuettel. Black liquor was obtained by subjecting jack pine woodmeal to a standard kraft cooking treatment. The desired extract was isolated by acidifying the black liquor, filtering from the alkali lignin and then isolating the black liquor extract from the weakly acidified fraction of the black liquor by precipitating with lead acetate, washing the resulting insoluble lead salt with water, suspending the same in water, removing the lead with hydrogen sulphide, evaporating under reduced pressure and extracting the residual product with petroleum ether in order to remove resins.

The color properties of this black liquor extract (Table I) are in general the same as described previously by Kuettel and by Holzer. These authors concluded that this extract is the actual coloring matter in kraft pulp, since, in common with kraft pulp, it exhibits a darkening effect on standing in air, a temporary darkening on treatment with hypochlorites, an indicator type of effect with acids and bases, and also requires (supposedly) very large

* From a thesis by Harry Schwartz presented to the Faculty of Graduate Studies and Research, McGill University, October, 1939, in partial fulfilment of the requirements for the degree of doctor of philosophy.

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amounts of chlorine for its decolorization. Furthermore, from its qualitative reactions with ferric chloride, bromine water and lead acetate, as indicated in Table I, it was suggested that this black liquor extract is a phlobatannin or phlobatannin derivative.

Although such properties indicate the presence of a phenolic nucleus and also suggest a tannin structure, they do not provide a proof that the material is a phlobatannin. The ferric chloride test is not specific for such derivatives and it is known *(6)* that the color obtained with this reagent is related to the orientation of the phenolic hydroxyl groups in the benzene nucleus and has no further structural significance. Phlobatannins, moreover, are reported *(6)* to give a red precipitate on boiling with dilute sulphuric acid, while the black liquor extract was found to yield a black precipitate.

Attempted Removal of "Black Liquor Extract" or its Precursor before Cooking

If the black liquor extract arises from the natural phlobatannins present in wood, as assumed by Kuettel and by Holzer, then it should be possible, by means of suitable solvents, to remove the phlobatannins from wood before cooking and thus prevent the formation in the black liquor of the extract as isolated and described above.

Jack pine woodmeal was therefore extracted with boiling water for four 12-hour periods. Such treatments should remove most, if not all, tannin material since Perkin and Everest *(7)* claim "all the well known tannins are dissolved by hot water," and Hawley and Wise *(8)* state that nearly all tannin material can be extracted from wood by means of hot water. The extracted wood meal was then cooked by the standard kraft process and the resulting black liquor was found to contain the black liquor extract in an amount of 2 to 3% of woodmeal taken, or approximately equal to that obtained from the unextracted woodmeal. It therefore seems probable that a natural phlobatannin is *not* the source of the black liquor extract.

In subsequent experiments the hot water extracted woodmeal was further extracted with alcohol-benzene (1:1), and divided into three portions. Each portion was now cooked by the standard kraft process the first without further treatment, the second after extraction with hot alkali (1% NaOH), and the third after extraction with acidified isoamyl alcohol. From each of the three black liquors it was possible to isolate the black liquor extract in approximately the same yield (2 to 3%).

It is unlikely that any natural phlobatannin would be present in woodmeal after thorough and successive extraction with these several solvents, in all of which the natural phlobatannins are more or less readily soluble. The probable reason why the black liquor extract could not be removed from the wood before cooking is that actually it is formed during the pulping process, not from an "extractive" such as a phlobatannin, but rather from an integral part of the cell wall such as the lignin.

Comparison of Materials Extracted from Black Liquor and from Kraft Pulp with Kraft Lignin

Holzer *(5)*, from evidence provided by color absorption curves, considered that his "coloring matter" from black liquor and from kraft pulp was identical. It seemed advisable to reexamine this finding and to compare the properties of his two materials with those of kraft lignin.

Black liquor extract was purified by Holzer's procedure by dissolving the crude Kuettel product in dilute ammonia and precipitating out the residual resinous impurities by acidification with dilute acid. Kraft pulp extract was isolated from spruce kraft pulp by refluxing the latter with an acidified amyl alcohol-water mixture. Kraft lignin was isolated by acidifying black liquor obtained from a standard cook, filtering off the precipitated lignin, then purifying the latter by solution in dilute alkali and reprecipitation with dilute acid.

As shown in Table I, the properties of the kraft pulp extract resemble more closely those of kraft lignin than black liquor extract. Since both of the former materials show a relatively high methoxyl content (ca. 13.5% OCH_3) and seem to be identical in the other minor properties investigated, there is no apparent need to distinguish between them. Hägglund and Urban *(9)* have employed acidified isoamyl alcohol to extract lignin by alcoholysis of ground pine

TABLE I—SOME PROPERTIES OF VARIOUS ALKALINE DIGESTION PRODUCTS

Material	Solubility in slightly acidic HCl soln.	Effect of air on slightly acidic HCl soln.	Color change on making acid soln. alkaline	Color change on hypochlorite treatment	Action of bromine water	Action of $Pb(Ac)_2$ soln.	Action of $FeCl_3$ soln.	Methoxyl content %	Pentosan content %
Black Liquor Extract (Kuettel product)	soluble	darkens on standing	yellow to dark brown	darkens temporarily	yellowish orange ppt.	tan colored ppt. (in aq. soln.)	greenish brown color (in aq. soln)	not analyzed	not analyzed
Black Liquor Extract (Holzer product)	same	same	same	same	same	same	same	5.6	2.8
Kraft Pulp Extract	insol.	not tested	dark yellow to dark brown	darkens temporarily	not tested	brownish colored ppt. (in alc. soln.)*	dark brownish color (in alc. soln.)*	13.6	not analyzed
Kraft Lignin	insol.	not tested	dark yellow to dark brown	darkens temporarily	not tested	brownish colored ppt. (in alc. soln.)*	dark brownish color (in alc. soln.)*	13.3	1.6
Lignin Degradation Product	sol.	darkens on standing	dark yellow to dark brown	darkens temporarily	yellowish orange ppt.	tan colored ppt. (in aq. soln.)	brown color (in aq. soln.)	7.2	not analyzed
Carbohydrate humification products	sol.	does not darken on standing	no change in brown color	does not darken	no ppt.	tan colored ppt. (in aq. soln.)	greenish-black color (in aq. soln.)	0	not analyzed

* When sample to be tested was insoluble in water, alcoholic solutions of both sample and reagent were used.

wood. Within the limitations of present knowledge, the kraft pulp extract is beyond doubt a lignin product and not a phlobatannin.

Black liquor extract differs from the above lignins in that it has a considerably lower methoxyl content (5.6% OCH_3). However, Russell *(6)* has stated that natural phlobatannins contain no methoxyl groupings and, if this is true, then the black liquor extract of Kuettel and of Holzer cannot be classed as a phlobatannin. Other properties of the extract, such as its solubility in water and in weakly acid solution, suggest that it may contain a greater number of free hydroxyl groups instead of the usual methoxyl radicals but otherwise have the same basic structural configuration as the lignins.

In order to determine whether demethoxylation occurs during pulp digestion a sample of kraft lignin (OCH_3 13.3%), prepared by precipitating black liquor with hydrochloric acid, was digested at 170 deg. C. with sodium hydroxide for three hours, then a fraction isolated by a preliminary precipitation of the alkali lignin with acid followed by treatment of the weakly acid solution with lead acetate and removal of lead from lead salt obtained. This fraction, or lignin degradation product as it might be called, was found (Table I) to have a methoxyl content (7.5% OCH_3) somewhat similar to that found in the black liquor extract (5.6% OCH_3); to give similar color reactions as well as to be isolable by the same method. These results, taken in conjunction with those above relating to the solvent extraction and cooking of wood meal, lend support to the idea that the black liquor extract is probably a demethylated lignin produced from lignin as a result of the action of the alkali during the pulping treatment.

It is quite probable, however, that black liquor extract is not a homogeneous material, as claimed by Holzer *(5)*, and not identical with the lignin degradation product, since not only are the methoxyl analyses slightly different, but the former material also contains a small amount of pentosans (2.8%). Among other colored impurities, black liquor extract may perhaps contain complex carbohydrate humification products since certain isolated carbohydrates, such as glucose, xylose, fructose and pectin, when treated under conditions similar to those prevailing in alkaline pulping, yield colored methoxyl-free derivatives. These are isolable by the same procedure as used for black liquor extract from the kraft black liquor. It would seem that although such carbohydrate humification products and other colored impurities may contaminate it, the black liquor extract itself probably arises from the lignin.

Consumption of Chlorine by the "Black Liquor Extract"

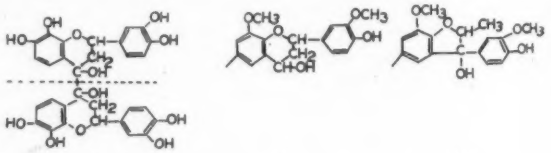
Irrespective of the nature of the black liquor extract it is of interest to know whether, if present in pulp through absorption from the black liquor, such material in being decolorized consumes extraordinary amounts of chlorine as compared with lignin. To this end samples of black liquor extract and also of kraft lignin were dissolved in alkali and treated with hypochlorite sufficient to decolorize them. It was found that the black liquor extract and the kraft lignin required 3.0 and 4.0 grams of active chlorine per gram of material respectively. These results should dispel any notion that black liquor extract, or the coloring matter of kraft pulp according to Kuettel and Holzer, whatever its chemical nature, is of any more importance in the bleaching of pulp than the usual kraft lignin. As a matter of fact the black liquor extract actually requires less chlorine to be decolorized than does the lignin.

Conclusions

Finally, the data can be considered from two points of view; firstly, as to the possible origin and structure of the black liquor extract and kraft pulp extract, and, secondly, as to the probable influence of these products in relation to the whiteness of kraft and other pulps.

The determination of structure of complex amorphous organic substances is difficult and this has not been attempted in the present case. The black liquor extract, however, has been compared with kraft pulp extract and kraft lignin and, in certain properties, notably methoxyl content (Table I) was found to be quite different. It has been shown that the formation of the black liquor extract is not prevented by extracting woodmeal with various solvents prior to cooking, thus pointing to the conclusion that this material is actually formed in the process of the cooking treatment and is not originally present in the free state as, for example, a tannin in the original woodmeal. Likewise it has been shown that, by treating isolated kraft lignin under the conditions of the alkaline cooking procedure, a material is formed in small yield which has many of the superficial properties of the black liquor extract. These findings suggest that the black liquor extract may be regarded as a demethoxylated degradation product of the lignin and not as a phlobatannin present in the original wood. The kraft pulp extract, however, has a methoxyl content quite different from that of the black liquor extract and apparently has no characteristics distinguishing it from the kraft lignin.

While definite conclusions as to structure of the black liquor extract are not at present possible and were not the intent of this study, it may be of interest to take note of the general type of chemical structures proposed as units for phlobatannins and for lignin. Russell *(6)* has suggested the flavpinacol type of structure I for hemlock tannin, while Freudenberg *(10)* and Hibbert *(11)* have proposed unit structures of the general type of II, and III, respectively, for lignin. Both of the latter authors are of the opinion that in lignin such building units may have slightly different configurations or linkages in



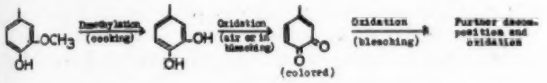
I
Hemlock Tannin
(Russell)

II
Lignin Building Unit
(Freudenberg)

III
Lignin Building Unit
(Hibbert)

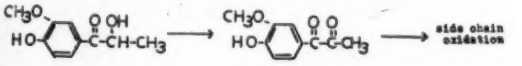
the three carbon side chain attached to the phenolic nucleus. From these structures, however, it is quite clear that a close similarity exists between the chemical structure of phlobatannins and lignin, and that certain similarities in properties should be shown by these materials. Anthocyanidines likewise have a generally similar configuration and all are perhaps interrelated in processes of plant growth.

It is possible that low methoxyl-containing constituents of the *ortho*-dihydroxyphenolic type, probably present in the black liquor extract, are the cause of the reddening of freshly blown pulp when exposed to air, and also of the color change of pulp on addition of the agent in hypochlorite bleaching. For example, catechol residues formed by demethoxylation of lignin during cooking, or by the action of chlorine during bleaching are very readily oxidized to colored quinones, which in bleaching are probably decomposed almost immediately.



POSSIBLE OXIDATION AND DEMETHYLATION OF LIGNIN RESIDUES

A diketone system with similar oxidative and color properties may also result from an oxidation of side chain groups in the types of lignin building units recently isolated from the ethanolysis reaction by Hibbert and co-workers *(12, 13, 14, 15)*.



OXIDATION OF LIGNIN BUILDING UNITS

Probably both systems are involved in the color reactions of lignin. The same general type of oxidative reactions may also affect the darkening in color on exposure of newsprint to air. However, irrespective of its source or nature, black liquor extract is not believed to cause unusual difficulties in the course of bleaching and thus to merit the name "coloring matter". In the opinion of the writers, the major difficulties in bleaching kraft pulp are still to be found in the question of the structure and properties of the residual lignin, although colored materials absorbed from the black liquor no doubt add to this difficulty.

The structure of protolignin or lignin as it exists in wood is not yet completely elucidated and little information is yet at hand regarding the complex changes which protolignin may be presumed to undergo when treated with alkali at high temperature and pressure. When residual kraft- or alkali lignin is treated with aqueous solutions of chlorine, neither the reaction nor the products appear to be of a simple character; apparently both chlorination and oxidation reactions are involved to varying degrees dependent upon the prevailing conditions *(16, 17, 17a)*. There are also indications, from preliminary work carried out by the authors, that sulphur present in the residual lignin of kraft pulp may add resistance to the solubilizing action of chlorine solutions. Other complicating factors are introduced when chlorinated lignins are treated with alkali. Peniston *(18)* has shown that lignins (or at least methoxyl-containing constituents) which are soluble in 72% sulphuric acid, the reagent used in the usual lignin estimation method, are present in semi-bleached alkaline pulps. It is probable that such materials, or acid soluble lignins as they might be called, are the cause of some of the difficulty in achieving a permanent white color in pulp. Such materials can be removed from pulp only by very thorough washing, preferably with alkali or some other swelling agent. Unless the washing process is thorough, soluble chlorinated lignins remain in the interior of the bleached pulps and later diffuse to the surface and cause a reversion in the color.

Because of the many complications in bleaching kraft pulp, principally due to lack of knowledge concerning the reactions and properties of lignin and chlorinated lignin products, it is clear that the bleaching process must be very carefully controlled if satisfactory results are to be obtained.[2] When optimum bleaching conditions are not maintained, chlorine is wasted and the bleached product still may not be satisfactory and this failure to achieve the desired bleaching may then be explained, as it often now is, by postulating unnecessarily the presence of a non-ligneous coloring matter.

Experimental

EXTRACTION OF WOODMEAL WITH VARIOUS SOLVENTS

In the various experiments, the extractions were carried out as follows:

Airdried jack pine woodmeal (finer than 50-mesh screens) was treated with water at reflux temperature for four successive 12-hour periods, using fresh water for each treatment. The alcohol-benzene treatment consisted of a 24-hour extraction in Soxhlet apparatus with a mixture (1:1) of alcohol and benzene, followed by a 24-hour extraction with ethanol (95%). In the alkali-pretreatment, woodmeal was refluxed with a sodium hydroxide solution (1%) for two successive 24-hour periods, using fresh alkali each time. The acidified isoamyl alcohol extraction was carried out for forty-eight hours using a mixture of hydrochloric acid (0.35N) and isoamyl alcohol (in ratio of 8:1) at reflux temperature.

COOKING OF WOODMEAL BY THE STANDARD KRAFT PROCESS

The four differently-extracted jack pine woodmeal samples described above, as well as the unextracted woodmeal, were cooked under the following standard conditions in a rotary iron digester:

Weight of woodmeal used (moisture-free basis) (g.)	400
Weight of sodium hydroxide (g.)	64
Weight of sodium sulphide (g.)	26
Total percent chemical based on wood (%)	22.5
Ratio $NaOH:Na_2S$	2.5:1
Volume of cooking liquor (cc.)	2000
Cooking temperature (deg. C.)	168
Time to maximum temperature (min.)	45
Total cooking time (hr.)	3-¼

At the end of each cook, the pulp was vacuum-filtered on a Büchner funnel, then washed with 2 liters of distilled water. The combined filtrate and washings (i.e. the black liquor) was used for the isolation of the black liquor extract.

ISOLATION OF BLACK LIQUOR EXTRACT

The black liquor was filtered through several layers of bleached sulphite pulp then acidified by dilute hydrochloric acid, avoiding a large excess. The precipitated lignin was filtered and washed with two liters of distilled water. The filtrate and washings, which darkened in color on standing in air, were allowed to stand for about a week in stoppered bottles when the precipitated sulphur was filtered off. Excess lead acetate solution (10%) was added to the

[2] Kraft pulp has been bleached very successfully both on a laboratory and plant scale with considerable saving in chlorine by means of the recently patented process of Joseph L. McCarthy, Harold Hibbert and G. H. Tomlinson.

filtrate and the voluminous tan-colored precipitated lead salt centrifuged and thoroughly washed with water. After suspending the lead salt in water, treating with excess hydrogen sulphide gas, and removing the precipitated lead sulphide by filtration, the yellow colored filtrate was concentrated to a syrupy consistency by vacuum distillation. Final concentration of the syrup was carried out by drying over concentrated sulphuric acid in a vacuum desiccator. The reddish brown residue was extracted with petroleum ether to remove resins. The yield of crude product based on weight of woodmeal cooked was 2 to 3%.

For methoxyl and pentosan analyses the black liquor extract described in Table I was isolated from black liquor obtained by cooking hot water- and alcohol-benzene extracted woodmeal. The crude black liquor extract was dissolved in dilute ammonia, resinous impurities were precipitated by acidifying slightly with dilute acid, and then removed by filtration as described by Holzer. The black liquor extract in solution in the filtrate was recovered by precipitation with lead acetate, followed by hydrogen sulphide treatment as before.

Isolation of Kraft Pulp Extract

Unbleached spruce kraft pulp (100 g.) containing 3.08% lignin was obtained from the Howard Smith Paper Mills Limited. It was extracted for three hours with boiling water, filtered, then washed with distilled water. This extracted pulp was then refluxed six hours with a mixture of 6*N* HCl (50 cc.), amyl alcohol (200 cc.) and distilled water (1400 cc.). The pulp suspension was filtered and the treatment repeated with fresh reagents. The two filtrates were combined and the amyl alcohol layer washed with distilled water to remove acid and soluble carbohydrates. The amyl alcohol layer was concentrated under reduced pressure to a volume of 25 cc. and then precipitated into 250 cc. of dry petroleum ether. The dark yellow colored precipitate was centrifuged, washed with dry petroleum ether, then dissolved in 15 cc. of dry acetone, the acetone solution precipitated into 150 cc. of dry petroleum ether and again centrifuged. The light-brown product thus obtained was dried in an Abderhalden drier (P_2O_5; 60 deg. C; 15 mm.). The yield was 0.14 g. This method of purification (precipitation into petroleum ether) served for complete removal of the resins.

Isolation of Kraft Lignin from Black Liquor

Black liquor, obtained by cooking hot water- and ethanol-benzene extracted jack pine woodmeal, was slightly acidified with dilute hydrochloric acid. The precipitated lignin was filtered, washed with water, and then extracted with boiling water for two hours. The lignin was then dissolved in dilute sodium hydroxide, reprecipitated with dilute hydrochloric acid by acidifying just beyond the neutral point, centrifuged and washed with water. The entire treatment was then repeated.

The filtrate from the last acid precipitation of the lignin was colorless and yielded no precipitate with aqueous lead acetate solution.

Action of Sodium Hydroxide Solution at 170 Deg. C. on Kraft Lignin

Kraft lignin (5 g.) was treated with hot alkali (150 cc. of 5% NaOH) at 170 deg. C. for three hours in an Allegheny metal bomb of 200 cc. capacity. At the end of the treatment the solution was acidified slightly with dilute hydrochloric acid and the precipitated lignin filtered off. The yellowish colored filtrate darkened on standing in air. The colored lignin degradation product in the filtrate was precipitated with lead acetate and freed from lead by hydrogen sulphide as described above in the case of the black liquor extract. The yield was 2.5% based on the weight of the lignin used.

Action of Sodium Hydroxide Solution at 170 deg. C. on Certain Carbohydrates

Glucose, xylose, fructose and pectin (5 g.) were treated separately with sodium hydroxide (5%) at 170 deg. C. as described in the previous paragraph. In every case, colored materials (5 to 8% yield) were isolated in the same way as that used for the "lignin degradation product."

Decolorization of Samples with Hypochlorite Solutions

Black liquor extract and kraft lignin were investigated. The material (0.1 g.) was dissolved in alkaline solution (15 cc. of 1% NaOH), diluted with water to 100 cc., and 0.1 g. of active chlorine (in the form of sodium hypochlorite bleaching liquor) was added to each. When all of the added chlorine had been consumed, as determined by titrating a 1 cc. sample with a sodium thiosulphate solution, another 0.1 g. of active chlorine was added. This procedure was continued until the solution was decolorized.

It was found that black liquor extract (0.1 g.) absorbed 0.3 g. of active chlorine, while the same weight of kraft lignin absorbed 0.4 g. of chlorine in being decolorized.

Analyses and Tests

The solubility and color tests are shown in Table I.

Methoxyl was determined by the semimicro method of Vieböch and Schwappach (*19*); pentosan according to Powell and Whittaker (*20*). Pentosan was calculated as 1.71 times per cent furfural, a value in agreement with Kröber's tables (*21*) for the size of the sample used.

Acknowledgment

The authors wish to thank the Canada Paper Company for kind financial assistance which made this investigation possible.

The authors also wish to thank the United States Forest Products Laboratory, Madison, Wis., for making the thesis *(4)* of G. M. Kuettel available prior to publication of this paper.

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A Nitrosolignin Colorimetric Test for Sulphite Waste Liquor in Sea Water

By Irwin A. Pearl[1] and H. K. Benson[2]

Abstract

A new rapid method for the quantitative estimation of sulphite waste liquor in sea water is described. The method is based upon the formation of a highly tinctorial nitrosolignin by the action of nitrous acid. Methods are described for use with either temporary or permanent standards.

The detection and determination of sulphite waste liquor in sea water has been the subject of investigation for a number of years. Numerous methods have been proposed. By comparison with an unpolluted reference station in the same locality, Benson *(1)* has shown that the biochemical oxygen demand is useful for measuring small amounts of sulphite waste liquor. However, this determination is equally sensitive to sewage and other common polluting agents. The Benson and Hicks *(2)* modification of the permanganate method for oxygen consumed is more sensitive. Thompson and Bonnar *(3)* have proposed the measurement of the buffering capacity of sea water as a means of detection of sulphite liquor. Photosynthesis, land drainage and trade wastes, however, greatly affect this property of sea water. Benson and Benson *(4)* have pointed out that because of the complicating factors in sea water, in the absence of a specific test, the presence or absence of sulphite waste liquor, unless in great quantity, must be established by a number of corroborative tests rather than by the simpler determinations used in studies of fresh water pollution. They have shown that a large range of determinations, such as color, pH, buffer capacity, sulphate-chloride ratio, dissolved oxygen, and oxygen consumed are available.

The ultraviolet fluorescence of sulphite waste liquor observed by Kirmreuther, Schlumberger, and Nippe *(5)* and by Gerngross and Tsou *(6)* has been used to qualitatively detect sulphite waste liquor in fresh water *(7)*. Demmering *(8)* has used absorption spectral analysis for the routine checking of highly contaminated fresh water. Miller *(9)* has adapted the well known phloroglucinol test for lignin to the quantitative estimation of sulphite waste liquor in fresh water.

Our investigation was undertaken to find a sensitive, rapid, and accurate method for the quantitative estimation of sulphite waste liquor in sea water for both laboratory and field use. An attempt was made to adapt Miller's modification of the phloroglucinol test for use in sea water. However, since his method is based on evaporation of a large volume of solution, the presence of large quantities of salts nullifies its use. Attempts to remove the salts by electrodialysis proved fruitless because the magnesium present did not dialyze. This method of attack had to be abandoned, and a search was made for a color reaction for sulphite waste liquor that was not affected by the presence of salts in solution.

In the course of the search for a specific color reaction for sulphite waste liquor an attempt was made to reverse the standard nitrite test. This well known diazo reaction involves the diazotizing of sulphanilic acid by an acid solution of the nitrite and the coupling of the diazo compound so obtained with an aromatic phenol or amine. Inasmuch as the largest component of sulphite waste liquor is lignin, and lignin is phenolic in character, a sample of diluted sulphite waste liquor was added to a dilute acetic acid solution of sulphanilic acid and sodium nitrite. A very deep amber color was produced. This reaction was very sensitive, even in great dilution. Further experiments showed that the sulphanilic acid was unnecessary, and that the deep amber color was developed by nitrous acid alone. Furthermore, the developed color could be intensified by making the solution alkaline with ammonium hydroxide.

These experiments indicated that the color produced in the test was due not to a developed azo dye, but to a nitrosophenol or, in this case, nitrosolignin. As in the case of all nitroso- or nitrophenols, the color is greatly intensified in alkaline solution.

In order to show that the color produced was due to lignin and not to other components of sulphite waste liquor the following experiments were made. Purified calcium lignosulphonate was prepared, and various dilutions of it in sea water were treated according to the recommended procedure. The color produced was more intense than the corresponding dilution of digester liquor. The sensitivity was increased approximately 20 times. (The digester liquor used contained 55 grams of calcium lignosulphonate per liter.) Solutions of isolated lignin also were tested. Even more striking results were obtained.

A series of standard dilutions of sulphite waste liquor from the digester were prepared in unpolluted sea water. A 50-cc. Nessler tube was filled to the mark with the solution to be tested. One cc. of 10% freshly prepared sodium nitrite solution and one cc. of 10% acetic acid were then added, and the mixture well shaken. Two cc. of 2 *N* ammonium hydroxide were then added, and the mixture again thoroughly shaken. After settling a few moments the color in the tube was noted.

The standards and unknowns were made in exactly the same manner. The unknowns were compared with the standards by viewing through the length of the solutions against a white background arranged so that light was reflected upward through the columns of liquid. Preliminary standards were made with dilutions of 10, 100, 1000, and 10,000 parts per million of sulphite waste liquor. The approximate range of the unknown solution could be found in a few moments. Then, if more exact measurements were desired, more standards with less difference in concentrations were prepared in the desired range, and the unknowns again compared.

A sea water sample containing 10 p.p.m. of digester liquor was easily determined by this procedure. The use of 100-cc. Nessler tubes and corresponding increase in reagents increases the sensitivity, but the

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colors due to naturally occurring components of sea water itself may interfere with the accuracy of the determination.

A number of factors affecting the sensitivity of this determination have been investigated. Evaporation of the solution to one-tenth its original volume increased the sensitivity of the test approximately 10 times. For example, 500 cc. of a known sea water sample containing one p.p.m. of sulphite waste liquor was evaporated to 50 cc. After filtering out the crystallized salts, the above test was applied. A color almost the same as that developed by a solution originally containing 10 p.p.m. was produced. However, if this procedure is to be used, the standards should be prepared from unpolluted sea water that has been evaporated to one-tenth its original volume. This modification is impractical for use in the field and for routine analysis.

Temperature exerts a marked influence on this test. If the solution to be tested is warmed to a temperature of 70 deg. C. before the test is applied, the color produced is more intense, and the sensitivity of the test is multiplied by approximately 10. However, since temperature is such an important factor in determining the color produced, for routine analysis more satisfactory results are obtained if all solutions and reagents are kept at the same temperature — i.e., room temperature.

It was found that dilution affects the intensity of the color produced. For example, if 10 cc. of 1000 p.p.m. sulphite waste liquor is treated with the reagents and then diluted to 100 cc., the color developed is markedly different from the color obtained by treating 100 cc. of 100 p.p.m. sulphite waste liquor by the same procedure. Therefore standards must always be made according to the given procedure from solutions previously diluted to volume.

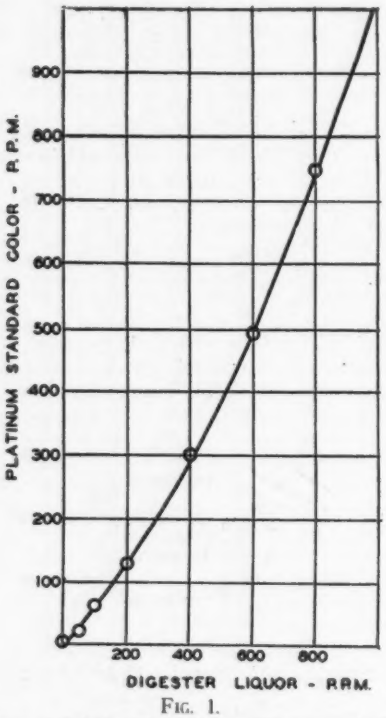

FIG. 1.

Comparison of Sulphite Waste Liquor Dilutions with Platinum Standards.

The nitrosolignin test described above is actually a modification of the so-called Ehrlich's diazo reaction which has been investigated by Jackson and Dehn *(10)*. These authors found that most phenolic compounds gave colorations with the nitrite reagent, but few gave intense brown colors even in concentrated solutions. The only compounds naturally occurring in sea water that might interfere with this test are cresols from creosoted pilings or phenolic hydrolytic products of marine proteins—e.g., oyster sperm. However, the yellow colors produced by these compounds are very light, and in dilutions greater than one part in 1000 of sea water, are not discernible. To determine the effect of marine animals and flora on this test, a sample of water from the sea water aquarium in the Oceanography Building at the University of Washington was tested. This water had not been changed for three years. No color was developed by the nitrite reagent. The effect of sewage and trade wastes also was studied. Polluted water from the Seattle water front was tested. No color was produced. An infusion of saw dust and bark was tested. Slight coloration due to extracted tannins or phenolic compounds was obtained.

Caution must be exercised, however, in the interpretation of color tests in sea water. In addition to organic matter brought in by stream dilution, striking color mass is often observed, and found due to phytoorganisms, as well as to organic matter from land drainage. To minimize the effect of color in the water, when comparing the unknown solutions with standards, the standards must be made with unpolluted sea water from the same locality.

The standards prepared according to the outlined procedure last from one to two days. After that magnesium hydroxide separates, and the reagents become opaque. This makes it desirable to use permanent standards. Platinum-cobalt standard solutions were made according to the method of the American Public Health Association *(11)*. The colors were expressed as mg. of platinum per liter or parts per million of platinum. The ratio of cobalt to platinum was adjusted to match the hue of the color produced by nitrosolignin. Comparisons were made in Nessler tubes according to the specified method.

The platinum color numbers were plotted against the corresponding concentrations, and the graph obtained could then be used for further work. The platinum color number of any treated sample was easily determined, and from the graph, the exact concentration was obtained. When making up standards for comparison with platinum color standards, care must be taken to keep them at the same temperature as that used when estimating the unknowns. Results of a comparison of sulphite waste liquor dilutions in sea water with platinum color standards are shown graphically in Fig. 1.

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Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING OCTOBER 26, 1940

SUMMARY

Cigarette paper .....10 cs.
Newsprint .....12,936 rolls
Miscellaneous paper .....7 cs.

CIGARETTE PAPER

Zorro Tobacco Co., ———, Lisbon, 10 cs., (wrappers).

NEWSPRINT

H. G. Craig Co., Inc., ———, Donnacona, 372 rolls.
———, ———, Liverpool, N.S., 5,905 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 324 rolls.
International Paper Co., ———, Gatineau, 340 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 324 rolls.
———, ———, Dalhousie, 5,343 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 328 rolls.

MISCELLANEOUS PAPER

H. C. Davison Co., Inc., ———, Yokohama, 6 cs.
Nippon Kogei, ———, Yokohama, 1 cs.

RAGS, BAGGINGS, ETC.

Castle & Overton, Inc., ———, Valparaiso, 18 bls. hemp waste.
Philadelphia National Bank, ———, Callao, 2 bls. rags.
Castle & Overton, Inc., ———, Valparaiso, 50 bls. hemp waste.
Williamson Products Co., ——, Rio de Janeiro, 80 bls. cotton waste.
J. Levy & Son, ———, Havana, 19 bls., 18 bags rags.

OLD ROPE

———, ———, Cristobal, 4 bls.

LOS ANGELES IMPORTS

WEEK ENDING OCTOBER 26, 1940

New Fashion Importing Co., ———, Kobe, 20 cs. transparent paper.
——, ——, Shanghai, 420 tons cotton waste bagging.
———, ———, Kobe, 1 cs. hanging paper.
———, ———, Powell River, 1,752 pkgs. newsprint.

Indianapolis Demand Expands

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., October 31, 1940—As the defense program in Indiana gets more and more under way, paper demand in several items is increasing. This is particularly noticeable in demand for heavy paper used in the packing industry and in wrapping paper and bags, the latter two items showing an increase due to expanding retail business, the result of more employment with larger wages. Incidentally prices on all three items are very strong and there are some who are predicting slight increases.

Fine paper demand is going along nicely with no disturbing factors in the market. Prices are firm. Local printers say there is quite a bit of work in prospect for late fall and immediately after the holidays and some of them are busy at the present time with prospects of steady business until the first of the year.

Building paper demand has fallen off somewhat during the last week. Volume is as good as a year ago, but there is every indication of a curtailment of buying. Retailers have fairly well balanced stocks and will hold them at a low point until after the first of the year. Such orders as are being received are only to replace stocks sold for current consumption.

Box demand is reported good. Much of the demand now is going directly to industries making parts and other accessories for the defense program, but there is a wide demand base and many industries which have been rather poor customers for a year or more are getting back into the market. Demand from the hardware and automobile accessory fields is picking up. Christmas demand is at its height and likely will be better than a year ago.

Newsprint demand is about on a par with a year ago, with a slight increase during the last week. Prices are steady.

Virtually no change was seen in demand for rags. In some grades prices were a trifle softer and mill demand appears to be limited to a few grades. No change in prices was seen in paper stock and trading is less active.

New Literature

Seamless tubular products are discussed in Technical Bulletin 11-C, issued by The Babcock & Wilcox Tube Company, Beaver Falls, Pa. It contains specifications for carbon steel and alloy steel tubes established by the American Society For Testing Materials and the Association of American Railways, and specifications established by The Babcock & Wilcox Company for high chrome and stainless alloy tubes.

The Lincoln Weldirectory, published by The Lincoln Electric Company, 12818 Coit road, Cleveland, Ohio, contains 58 pages and 165 illustrations, presenting procedures for producing all types of welds in mild steels and also procedures for general welding of high tensile steels and various alloy steels. A useful feature is a chart serving as a guide for the selection of electrodes for various applications. Copies of the publication are available on request from the above company.

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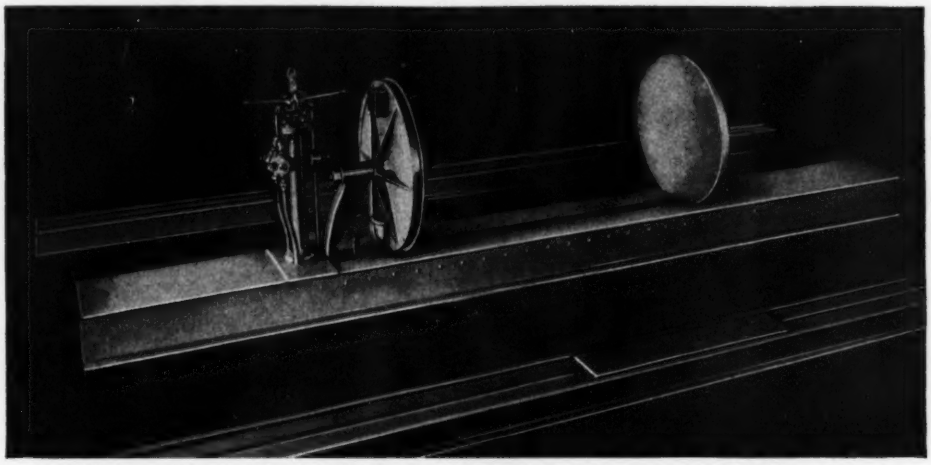

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New York Paper and Pulp Market Review

Paper and Pulp Markets Rather Weak At This Date With Prices Unchanged — Roofing Rag Prices Continue Firm — Exports of Lower Grades of Old Waste Paper To South America More Active.

Office of the PAPER TRADE JOURNAL,
Wednesday, October 30, 1940.

Sales volume in the wholesale paper market during the current weeks is fairly well maintained, but well below the volume at this date last year, according to reports received from many manufacturers' representatives, jobbers, and general paper merchants. Some of these reports reflect the opinion that consumer demand for some kinds of paper is very slowly rising. A similar situation prevails in many other consumer goods markets. The present major demand is for goods for military uses. Retail sales of general merchandise, however, are substantially higher than at this date last year, while paper is lower.

Business is somewhat slowly advancing to a higher level, as indicated by the index of general business activity, which rose to 108.4 per cent for the week ended October 19, compared with 108.2 per cent for the preceding week, and with 103.3 per cent for the corresponding week last year. Six of the eight components forming the index advanced, including miscellaneous carloadings. The advance in paper mill output was fractional.

Paper production of 245 mills for the week ended October 19 was estimated at 89.2 per cent, compared with 98.6 per cent for 1939, with 83.8 per cent for 1938, with 73.6 per cent for 1937, and with 88.2 per cent for the corresponding period for 1936.

Paper board production for the week ended October 19 was 78.0 per cent, compared with 84.0 per cent for 1939, with 70.0 per cent for 1938, with 64.0 per cent for 1937, and with 82.0 per cent for the corresponding period for 1936.

The current demand for paper is moderate but consumption is reported a little more than 9 per cent lower than at this date last year. Consumption of wrapping paper continues to lead. The paper market is rather soft, with prices unchanged, and with reports indicating some reductions from prevailing market quotations in the form of discounts. Inventories are moderate.

Mechanical Pulp

No important price change in the mechanical pulp market has been reported this week. This market is rather weak, with prices unchanged on prime grades of domestic and Canadian Mechanical pulp.

Chemical Pulp

The chemical pulp market is rather weak. No important change in demand or prices has occurred to date. Imports of chemical pulp for August, 1940, including 9,557 tons of mechanical pulp, totaled 83,640 tons, valued at $5,199,436, compared with 150,569 tons, valued at $5,544,516, and including 19,649 tons of unbleached mechanical pulp, for the like period last year.

Exports of chemical pulp for August, 1940, totaled 60,379 tons, valued at $3,998,973, compared with 598 tons, valued at $27,259 for August, 1939. Exports for the eight months of 1940 totaled 339,081 tons, valued at $20,369,219, compared with 61,487 tons, valued at $2,806,598 for the like period last year.

Rags

The rag market continues to reflect strength in the roofing grades, with the trade expecting moderately higher prices, as the trend in demand appears stronger and supplies are limited. More firmness is also reported in new cotton rags during the current week, but no important change from prevailing market quotations has been reported to date.

Old Rope and Bagging

Mill buying of old Manila rope continues steady. Prices continue firm under the influence of good domestic demand and narrowing supplies. No important change from current market prices has occurred this week.

The old bagging market continues to reflect narrow trading, with supplies generally reported as limited. Quotations are unchanged.

Old Waste Paper

A little more strength is reported in old waste paper this week. Domestic demand continues moderate while export trade in the lower grades, particularly in No. 1 mixed paper, is good this week. The only price change reported to date is in strictly folded news, which is currently quoted at from .45 to .55.

Twine

No important change in demand or prices has been reported in the twine market this week. Prices are fairly well maintained at prevailing market quotations on all grades of hard and soft fiber twines.

Columbia Alkali Open Charlotte Office

W. I. Galliher, director of sales of the Columbia Alkali Corporation, a division of the Pittsburgh Plate Glass Company, announced last week the establishment of another chemical sales office in the southeast in charge of J. R. Simpson of Durham, N. C. After February 1, 1941, the office will be located at Charlotte, N. C.

Mr. Simpson, former director of the Duke University Appointments Office, was graduated from Duke University in 1924 and since that time has been engaged in educational affairs in the North Carolina Public School Administration and Duke University.

During his college career Mr. Simpson was prominent in athletic affairs, having served four years on the varsity football squad. Mr. Simpson was born in Winston-Salem, June 6, 1903. He was married July 5, 1924, and has a daughter, Jean, born July 5, 1928.

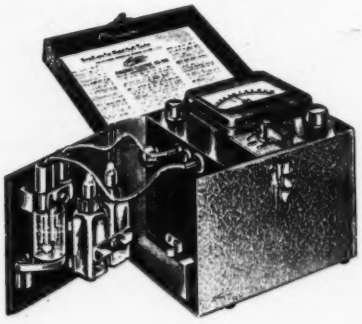
PROVED
J. Williams
ACME CO. PLANT NO. 1

Proof . . . not claims . . . stamps the

COLEMAN

INDUSTRIAL pH TESTER

invaluable to the paper plant at the bleacher and beater.



Permits plant men to cooperate closely with the chemist as this simple Tester is used at the vat.

Water-tight construction . . . with a rugged glass electrode . . . plant men, above all, like its operating simplicity in quick pH control tests.

Accuracy is guaranteed through a *single* daily calibration . . . no extra buffers required with the *Coleman*.

Full range 0 to 12 pH scale. Metal case 6½ x 7 x 8¼ inches.

Complete, ready for use..... **$84.50**
5 DAY QUICK TRIAL

Bulletin PT 1140 describes the *Coleman Industrial* pH Tester . . . write for it *today!*

Your complete satisfaction is assured because of our more than 1000 glass electrode pH meter and automatic recorder installations.

WILKENS-ANDERSON CO.
111 N. CANAL ST. CHICAGO

. . . HERE'S THE WAY ORR PUTS A NAP ON A FELT

Little thistle-like teasels, specially grown for Orr Felt in Oregon, are placed on a revolving drum. Their stiff points dig into the felt as it passes by, raising the wool fibres to form a nap.

This operation is far more difficult than it may appear. For one thing, it requires a trained operator, like this twenty-year veteran, to handle the controls. Then, each different type felt requires a different treatment—depending on the type of nap desired.

The care taken to nap an Orr Felt correctly is typical of the care taken in all Orr Felt departments. The result—felts superior by actual comparison—felts that will show you the true meaning of long life and thorough water removal. Next time, specify Orr Felts.

Orr Felt & Blanket Co.
PIQUA, OHIO

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, October 30, 1940.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand continues moderate for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, with prices unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at from 11 to 13 cents per pound; 80-100 mesh, at from 11½ to 14 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at from 11½ to 12 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Shipments reported steady. Solid caustic soda is currently quoted at $2.30 per 100-pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7 to $15 per ton; coating clay at from $11 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Demand reported good for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher. "G" gum rosin is currently quoted at from $1.73 per 100 pounds, in barrels, Savannah "FF" wood rosin is currently quoted at from $1.73 per 100 pounds, in barrels, New York.

SALT CAKE—Prices on salt cake are firm and nominal. Demand steady. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $20 per ton on imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported moderate for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and are a little lower for the current week. Pearl is currently quoted at $2.90 per 100 pounds; powdered starch at $3 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. Quotations on imported talc are nominal.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. l. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	35.00	@	40.00
Chip	35.00	"	40.00
Sgl. Mla. Ll. Chip	55.00	"	57.00
White Pat. Coated	67.00	"	70.00
Kraft Liners	55.00	"	—
Binders Boards	73.00	"	80.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Fct. No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	31.05 " 36.50	32.30 " 37.75
85% Rag	.... "	29.90 " 35.00
75% Rag	23.60 " 27.75	24.75 " 29.00
65% Rag	.... "	21.65 " 26.25
50% Rag	17.55 " 21.50	18.70 " 22.75
25% Rag	14.65 " 17.75	15.80 " 19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$9.35@$11.50	$11.55@$12.75
No. 2	8.50 " 10.25	9.65 " 11.75
No. 3	8.05 " 9.25	9.20 " 11.25
No. 4	7.70 " 9.50	8.90 " 10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper, Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.30
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	$10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at 8.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered Unbleached Sulphite	58.00	"	61.50
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	
Kraft Light & Strong	3.50	"	3.75
Kraft No. 1	3.40	"	3.60
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	2.75	"	3.37½
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.

Shirt Cuttings—			
New White, No. 1	6.50	@	6.75
Silesias No. 1	4.50	"	4.65
New Unbleached	6.50	"	6.75
Blue Overall	4.35	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	2.90
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.00	"	1.10
No. 2	.95	"	1.00
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal

New Rags

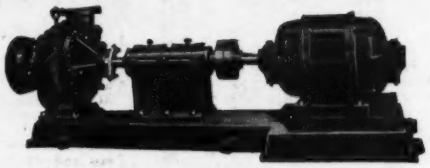
New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxford	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

STOCK PUMPS

by



FREDERICK

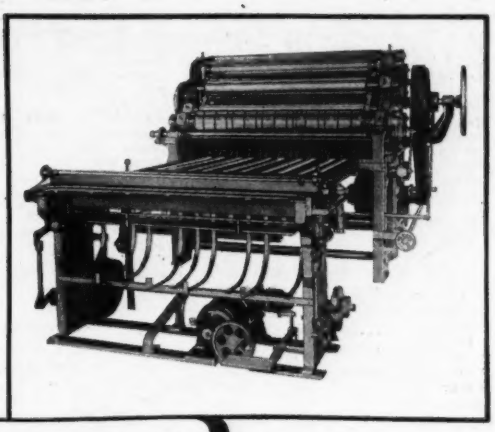
Specifically designed for each operating condition

The FREDERICK stock pump was designed in collaboration with paper mill engineers and paper mill operators. Operating requirements as well as scientific design were carefully considered. We learned that on the lower consistencies of stock certain clearances could be maintained in order to secure high efficiencies. We learned, also, that on heavy stock different design was required and that it was often necessary to sacrifice some efficiency in order to provide a unit that would successfully and continuously handle the high consistencies without clogging and without shutdown. Pumping is the very heart action of a paper mill and continuous, trouble-free operation of the pumping equipment is absolutely necessary to keep manufacturing costs low.

Each FREDERICK stock pump is a separately engineered unit. Each pump is built especially for the operating conditions to be met, taking into consideration the nature of the stock to be handled, the consistency, the piping layout and all the other items that must be carefully considered in order to furnish the unit best suited for the exact operating conditions specified.

When you buy a FREDERICK pump you purchase a unit that is GUARANTEED to meet the operating conditions for which it is sold.

THE FREDERICK IRON & STEEL CO. • Frederick, Maryland



HIGH PRODUCTION MULTIFOLD TOWEL FOLDER

This machine represents one of the rotary folding towel folders, for making multifold towels. Equipment is made to produce the various folds that are now common on the domestic market. Consult us regarding your folding problems, whether standard or special types.

PAPER CONVERTING MACHINE CO.
GREEN BAY, WISCONSIN
Manufacturers of paper converting machinery for all purposes.

APPLETON WIRES are GOOD WIRES

APPLETON WIRE WORKS, INC.
APPLETON, WIS.

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o .b. N. Y.)

Gunny No. 1—			
Foreign	2.75	@	3.00
Domestic	2.50	"	2.75
Wool Tares, light...	2.00	"	2.25
Wool Tares, heavy..	2.12½	"	2.25
Bright Bagging	2.25	"	2.50
Manila Rope—			
Foreign	4.75	"	5.00
Domestic	4.50	"	4.75
Jute Threads.....	2.62½	"	2.75
Sisal Strings.....	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.80	"	.85
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.80	"	1.90
Ledger Stock Colored	1.30	"	1.40
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.35	"	1.50
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue.	.70	"	.75
Strictly Folded....	.45	"	.55
Corrugated	.65	"	.67½
No. 1 Mixed Paper..	.32½	"	.35

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.18	@	—
White Hemp.....	.18	"	—
Fine Polished—			
Fine India.....	.22	"	—
Unpolished—			
Box	.16	"	—
Paper Makers.....	.13	"	—
Tube Rope.....	.14¾	"	—
Wall Paper.....	.16	"	—
Wrapping	.16	"	—
Soft Fiber Rope...	.14	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.10	"	—
Mex. Sisal.....	.09½	"	—
Manila	.23	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f.o.b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06½	@	.07
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached...	.06	"	.06¼
Washable Prints...	.02¼	"	.02½
Washable, No. 1..	—	"	.01¼
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01¼
Fancy Percales....	—	"	.03
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03½	"	.03¾
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¼	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.50	"	2.75
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
[illegible] No. 1....Nominal			
Domestic No. 1...	—	"	1.05
Domestic No. 2...	—	"	.90
Roofing Bagging..	—	"	.80

Bagging

(f.o.b. Phila.)

Gunny, No. 1—			
Foreign .....Nominal			
Domestic	2.25	@	2.50
Manila Rope.....	—	"	4.75
Sisal Rope.....	1.75	"	2.00
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.25	"	2.50
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.50	"	3.75
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	2.00	"	2.25

Old Papers

(f.o.b Phila.)

Shavings—			
No. 1 Hard White	2.40	@	2.50
No. 2 Hard White	2.10	"	2.15
No. 1 Soft White	2.00	"	2.10
No. 2 Soft White	1.60	"	1.75
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.75	"	1.80
Ledger Stock, colored	1.20	"	1.25
No. 1 Books, heavy..	.85	"	.90
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.60	"	.65
Container Manila....	.50	"	.55
Kraft Paper.....	1.40	"	1.50
No. 1 Mixde Paper..	.45	"	.50
Straw Board Chip...	.45	"	.50
Binders Board Chip..	.45	"	.50
Corrugated Board...	.65	"	.70
Overissue News.....	.75	"	.80
Old Newspapers.....	.50	"	.55

BOSTON

Old Papers

(f.o.b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.00
No. 1 Soft White	2.00	"	2.25
No. 2 Mixed.....	.75	"	.80
Solid Ledger Books..	1.50	"	1.75
Overissue Ledger Stock	1.75	"	2.00
Mixed Ledgers.....	1.25	"	1.50
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock.....	.75	"	.85
Manila Env. Cuttings	1.85	"	2.00
Manila Envelope Cuttings extra quality	2.35	"	2.60
White Blank News..	1.40	@	1.50
No. 1 Kraft.....	1.30	"	1.40
Extra No. 1 Kraft...	1.60	"	1.90
Mixed Papers.....	.35	"	.40
Print Manila.....	.55	"	.60
Container Manila...	.60	"	.70
Old Newspapers.....	.50	"	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	1.00	"	1.10
Box Board Chips....	.40	"	.45
Corrugated Boxes...	.60	"	.65
Kraft Corrugated Boxes	1.00	"	1.05
New Kraft Corrugated Cuttings	1.45	"	1.60
Screening Wrappers.	.70	"	.80

Bagging

(f.o.b. Boston)

Gunny Bagging—			
Foreign	—	"	2.35
Domestic	2.25	"	2.40
Sisal Rope.....	2.25	"	2.50
Mixed Rope.....	.85	"	1.00
Transmission Rope—			
Foreign	—	"	2.40
Domestic	2.00	"	2.25
Soft Jute Rope.....	3.00	"	3.25
Manila Rope—			
Foreign .....(nominal)			
Domestic	4.75	"	5.00
Jute Carpet Threads.	1.56	"	1.75
Bleachery Burlap....	4.00	"	3.25
Scrap Burlap—			
Foreign	2.35	"	2.50
Domestic	2.15	"	2.35
Scrap Sisal.....	2.25	"	2.50
Scrap Sisal for Shredding	2.30	"	2.65
Wool Tares—			
Foreign, Heavy...	2.25	"	2.40
Domestic	2.40	"	2.50
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	3.75	"	4.00
Heavy baling bagging	2.25	"	2.40
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.04	"	.04½
New White No. 1.	.07	"	.07¼
New Light Flannelettes	.05	"	.05¼
Canton Flannel, Bleached	.07	"	—
Underwear Cutters, Bleached	—	"	.07
Silesias, No. 1.....	.05	"	—
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached...	.07	"	.07½
Blue Cheviots.....	.05	"	.05½
Fancy	.02	"	.02½
Washable	.02	"	.02¾
Cottons—According to Grades—			
Blue Overalls.....	.04½	"	.05
New Black, Soft..	.03	"	.04
Khaki Cuttings....	.02½	"	.03
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.04	"	.05
New Canvas.....	.06¼	"	.07¼
B. V. D. Cuttings...	.07	"	.07½

Domestic Rags (Old)

(F. o.b. Boston)

White No. 1—			
Repacked	2.75	"	3.75
Miscellaneous	2.40	"	2.60
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	1.50	"	2.00
Old Blue Overalls ..	1.60	"	2.00
Thirds and Blues—			
Repacked	—	"	1.25
Miscellaneous	—	"	1.00
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.00	"	1.25
No. 2.....	—	"	1.10
No. 3.....	—	"	.90

Foreign Rags

(F. o. b. Boston)

Canvas	.04¼	@	—
Dark Cottons.....(nominal)			
Dutch Blues.....(nominal)			
New Checks and Blues(nominal)			
Old Fustians.....(nominal)			
Old Linsey Garments.(nominal)			
New Silesias.....(nominal)			

CHICAGO

Waste Paper

(f.o.b. Chicago)

Shavings—			
No. 1 White Envelope cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.95	"	1.10
Blanks	1.50	"	1.60
Krafts	1.40	"	1.50
New Kraft Cuts.....	1.60	"	1.75
Overissue News.....	1.00	"	1.10
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.40	"	.50
Roofing Stocks—			
No. 1.....	.95	@	1.00
No. 2.....	.85	"	.90

Peter J. Schweitzer, Inc. Expands

ELIZABETH, N. J., October 28, 1940—The addition to the Peter J. Schweitzer, Inc., plant at 994 Newark avenue, is 50 per cent complete, John D'Elia, superintendent for the D'Elia Building Company, Inc., general contractors, of Jersey City, said today. Erection of the new building is a step in the paper-making firm's projected million dollar expansion program.

Mr. D'Elia said a crew of approximately thirty union workers is being kept busy on the project. The steel-frame building is 104 feet long and sixty feet wide.

A new cylinder machine is presently being placed in position at the end of the building, in a section which rises to forty-eight feet. The remainder of the building is twenty-five feet high.

Brick work on the building is proceeding at a rapid rate and the iron detail has been almost completed. Steel staircases have been set and workmen are placing glazed terra cotta for the inside walls. Modern steel sash windows, giving a maximum of daylight, will be installed.

Equipment to be installed in the new plant here and in the firm's plant at Jersey City will increase the output of the concern about 50 per cent.

The management hasn't determined the personnel increase which will be needed. There are approximately 180 persons employed here, and about eighty in Jersey City.